

Gender Differences in Use of Complementary and Integrative Health by U.S. Military Veterans with Chronic Musculoskeletal Pain

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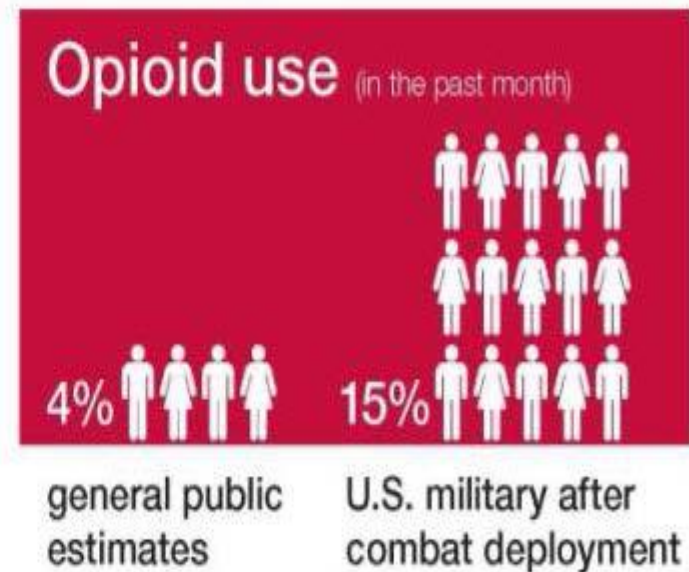
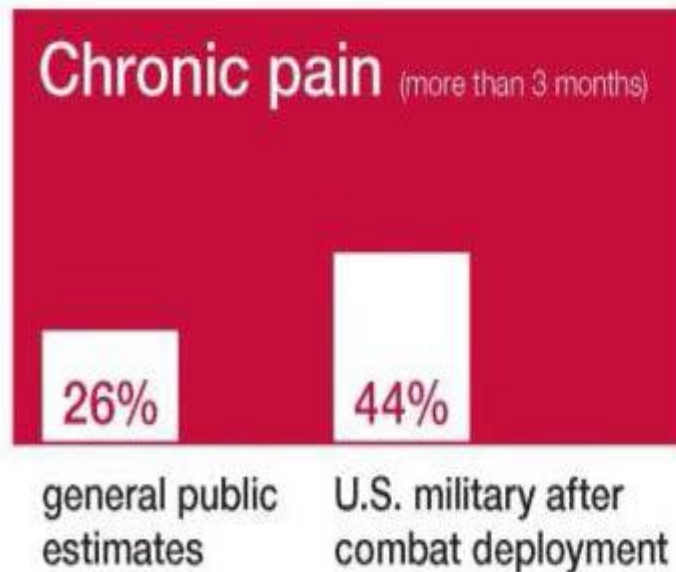
Musculoskeletal Disorder Study Cohort: Bob Kerns, MD; Cynthia Brandt, MD; Joe Goulet, PhD Yale and VA Connecticut

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Study Background/Rationale

Chronic pain and opioid use have been prevalent among Veterans for several years.



Study Background/Rationale

In the OEF/OIF/OND* Veteran population,

- 62% have musculoskeletal disorders, most of which are accompanied by pain.
- 58% have comorbid mental health conditions (e.g., anxiety, depression, PTSD)

*Operation Enduring Freedom/Operation Iraqi Freedom/Operation New Dawn

CIH Therapies as Non-Pharmacological Pain Mgmt Options

- Attention is being given to non-pharmacological pain mgmt. treatment options.
- One set of options are complementary and integrative health (CIH) therapies (e.g., yoga, acupuncture, meditation).
- Some CIH therapies are recommended for some types of pain in:
 - DHHS' National Pain Strategy for general public
 - American College of Physicians' clinical practice guidelines

Department of Health and Human Services. National Pain Strategy. Available at: https://iprcc.nih.gov/National_Pain_Strategy/NPS_Main.htm

Qaseem A, Wilt TJ, McLean RM, et al. Noninvasive Treatments for Acute, Subacute, and Chronic Low Back Pain: A Clinical Practice Guideline From the American College of Physicians. *Ann Intern Med.* 2017 Apr 4;166(7):514-530.

CIH Therapies as Non-Pharmacological Pain Mgmt Options

- Some CIH therapies has been available for years in the VA (in 2015, 93% had 2+ types of CIH).
- 2016 Comprehensive Addiction and Recovery Act (CARA) – VA to expand provision of and research on CIH therapies
- CIH therapies are a key component of Whole Health, which is being implemented throughout the VA.

Some CIH Therapies Have Been a VA Priority for Years

- 2010 Office of The Army Surgeon General's Pain Management Strategy for military and Veterans*
- 2014 VA's Blueprint for Excellence
- 2015 MyVA Integrated Plan
- 2016 VA USH declared 8 CIH practices as medical care
- 2017 VA Office of Research and Development
- 2018-2024 VA Strategic Plan:
 - “VA will also reinforce preventive health care practices to include incorporating complementary and integrative health care practices to reduce addiction, manage chronic pain, and improve mental health and other conditions that respond well to these interventions.”

* The Office of The Army Surgeon General's Pain Management Task Force. Providing a Standardized DoD and VHA Vision and Approach to Pain Management to Optimize the Care for Warriors and their Families. May 2010. Available at http://www.amedd.army.mil/reports/Pain_Management_Task_Force.pdf

Purpose of The Overall Study

However, given all this attention, we know little about:

- What types of CIH therapies are being used by Veterans with chronic musculoskeletal pain use,
- The costs of providing CIH therapies, and
- Whether this CIH use results in reductions in healthcare costs & opioid use.

Purpose of This Paper

- Women veterans may be especially impacted.
 - More women veterans than men are prescribed opioids for chronic pain (Kroll-Desrosiers et al., 2016, Mosher et al., 2015).
 - Women veterans are more likely to have multiple pain condition diagnoses (Higgins et al., 2017, Weimer et al., 2013) and self-report moderate to severe pain (Higgins et al., 2017).
 - More women veterans have co-occurring mental health problems (Finlay et al., 2015, Higgins et al., 2017, Howe and Sullivan, 2014).
- We aimed to examine CIH use by gender among veterans with chronic musculoskeletal pain, and variations in gender differences by race/ethnicity and age.

Design and Methodology

- Cohort: Mostly OIF/OEF/OND veterans with chronic musculoskeletal disorder pain
 - Using the VA healthcare system during 2010-2013
- Chronic musculoskeletal disorder pain = either:
 - 2 or more MSD ICD9 codes “likely to represent chronic pain” (from Tian et al*) separated by 30-365 days
 - OR
 - 2 or more MSD ICD9 codes within 90 days and with 2 or more pain scores ≥ 4 at 2+ visits within 90 days

*From Tian et al, J Am Med Inform Assoc. 2013; 20:e275-e280.

Defining Pain: Method 1

Examples of “likely to represent chronic pain”*:

- Psychogenic pain
- Central pain syndrome
- Joint pain
- Ankylosing spondylitis
- Arthritis of the spine
- Myelopathy
- Schmorl's nodes
- Disc degeneration
- Postlaminectomy syndrome
- Calcification of cartilage/disc
- Spinal stenosis
- Cervicalgia
- Lumbago
- Fibrositis
- Fibromyalgia
- Myelopathy
- Coccydynia
- Neuralgia
- Faciitis
- Pain in Limb
- Backache

*From Tian et al, J Am Med Inform Assoc. 2013; 20:e275-e280.

Defining Pain: Method 2

ICD9 code groupings for 2nd criterion – one of these types of pain + pain scores ≥ 4 :

- Back pain
- Neck pain
- Joint pain
- Osteoarthritis
- Temporomandibular disorder
- Fibromyalgia

How CIH Was Identified

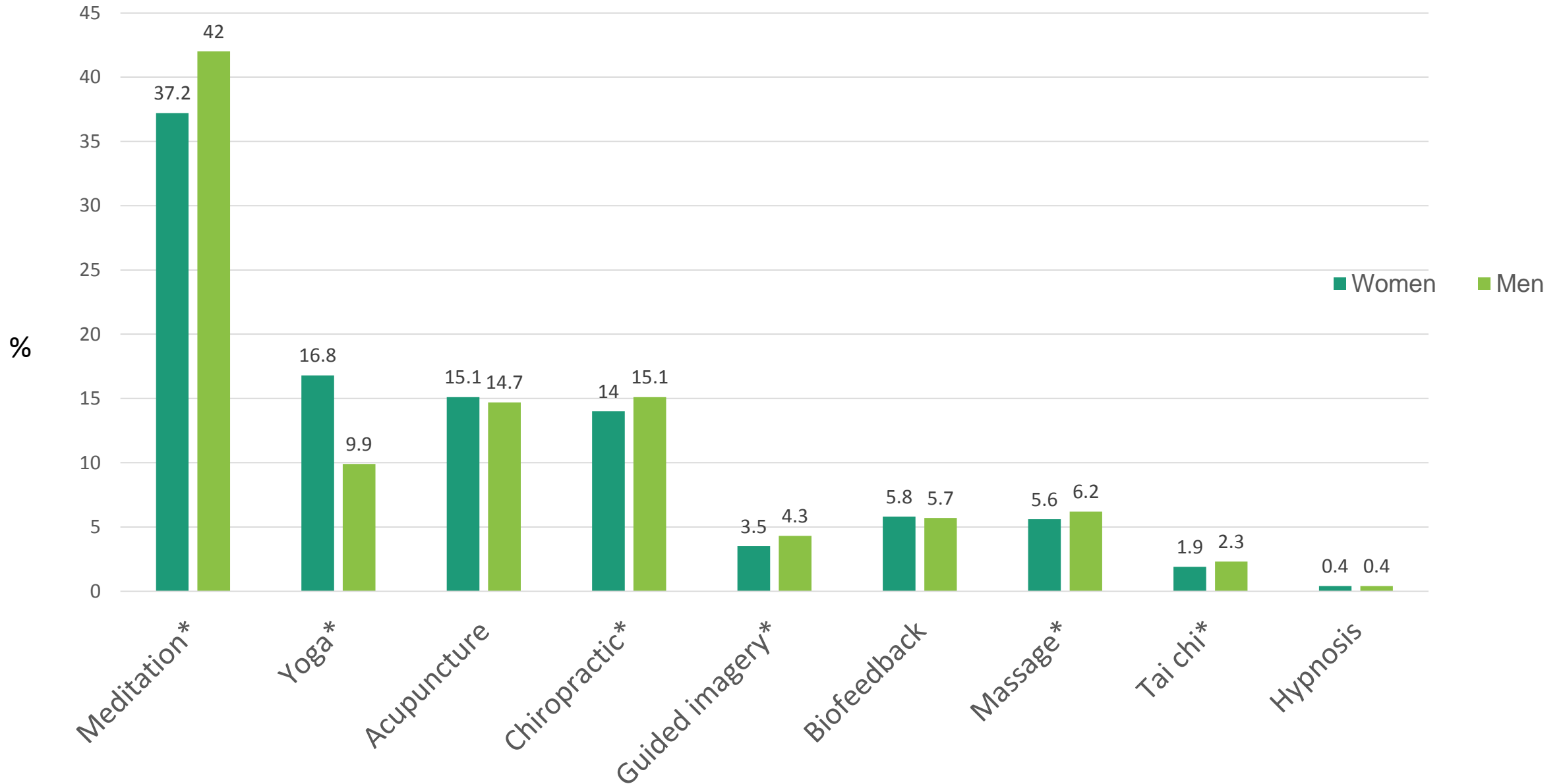
CIH Type	NLP	CPT Codes	CHAR Code
Acupuncture	X	X	X
Biofeedback	X	X	X
Guided imagery	X		X
Massage		X	X
Meditation	X		x
Tai Chi	X		X
Yoga	X		X
Hypnosis		X	X
Chiropractic*		X	

* Also identified through provider type codes.

Results of Bivariate Analysis: Characteristics of CIH Users Differ by Gender

	Women	Men
Race/ethnicity	African American	White
Age	18-44	45+
Marital status	Divorced or never married	Married
SES and disability	More income and less disability	Less income and more disability
Pain diagnosis	Neck pain, fibromyalgia	Back pain
Co-morbid conditions	Depression, anxiety, PTSD	Substance abuse, sleep, TBI, PTSD

Gender Differences in Type of CIH Used (n=127,832)



Methods: Logistic Regression Analysis

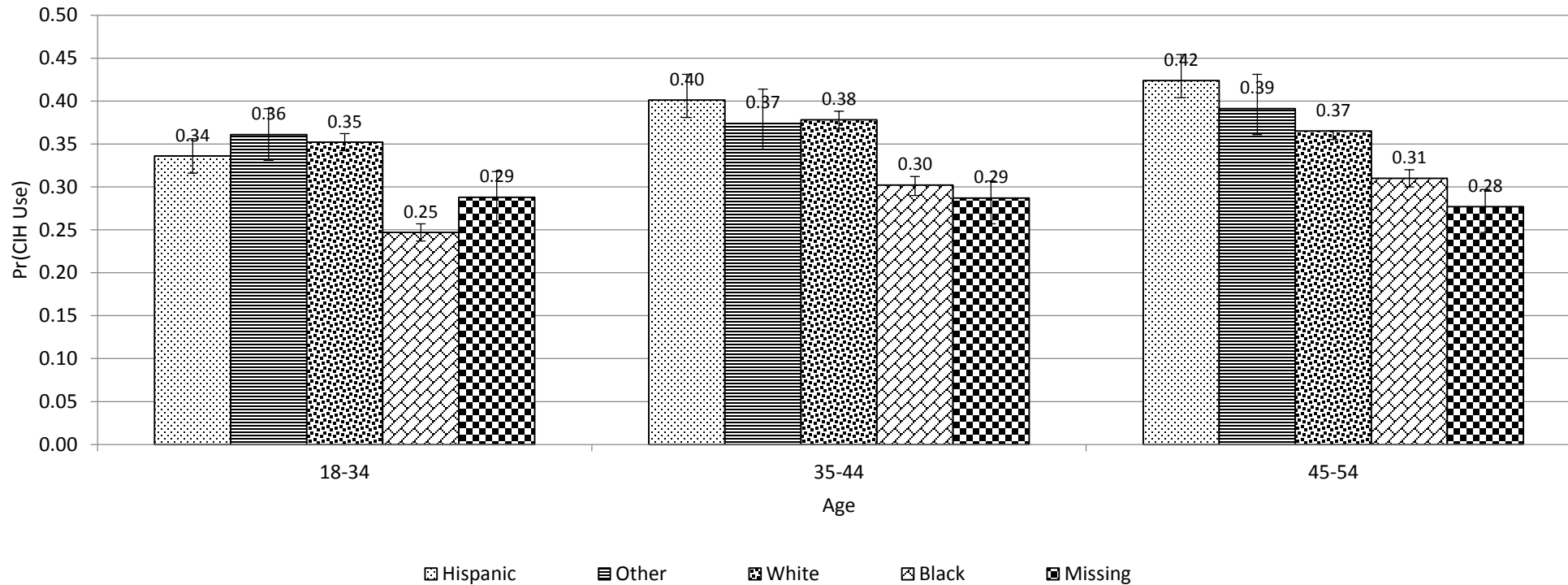
- Used a multivariate binary logistic regression model for women and men separately.
 - To assess associations between use of CIH therapies (yes/no), race/ethnicity, and age, controlling for covariates.
- Tested a “race/ethnicity-by-age” interaction term.
 - To calculate and graph the predicted probabilities with 95% confidence intervals for use of CIH therapies in relation to race/ethnicity and age.
- Used the full model and tested a 3-way interaction term (gender by race/ethnicity by age).
 - To assess whether moderation by race/ethnicity and age was different by gender.

Results of Multivariate Analysis: Predictors of CIH Use

- Black women are less likely than White women to use CIH therapies.
- Black men are more likely than White men to use CIH therapies.
- Other predictors of CIH therapy use are not different by gender.

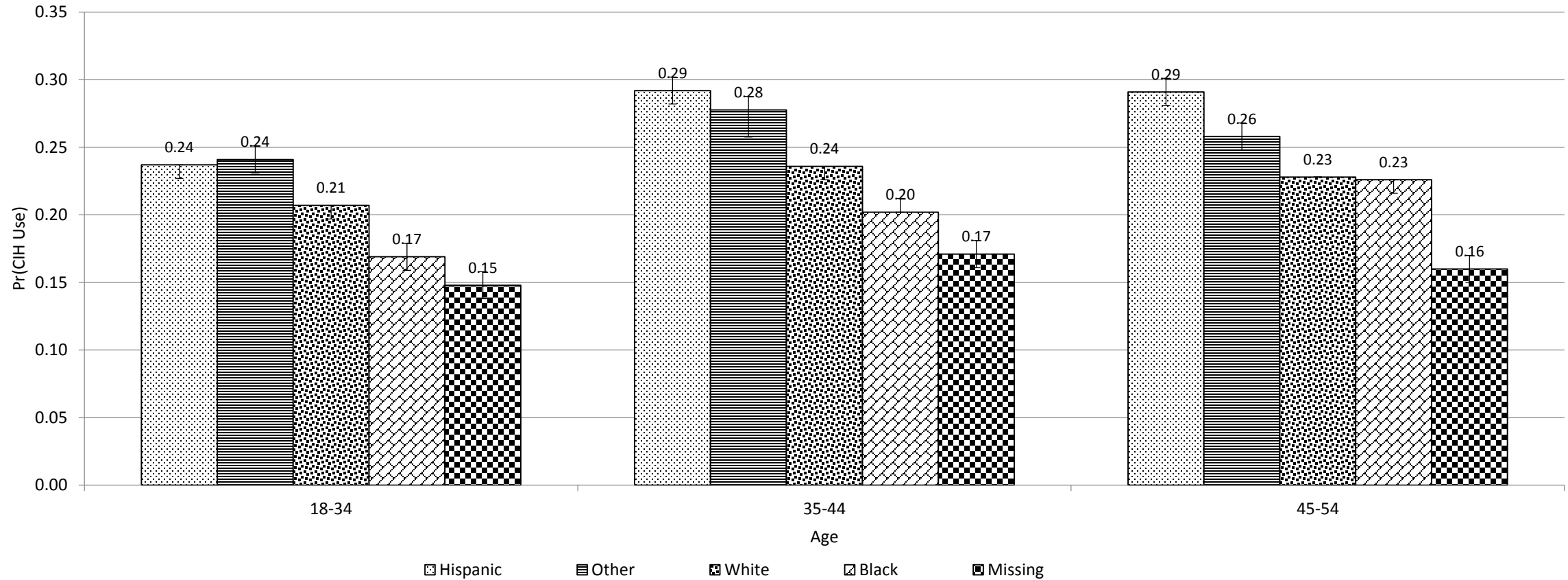
- Significant interaction terms
 - Race/ethnicity-by-age
 - Gender-by-race/ethnicity-by-age

Predicted Probabilities of CIH Use Among Women (n=79,537)



- CIH use rates range: 25%-42% among women
- Black women, regardless of age, are least likely of all women to use CIH.
- Higher use rates among Hispanic women

Predicted Probabilities of CIH Use Among Men (n=389,269)



- CIH use rates range: 15%-29% among men
- White and Black men, esp. younger Black men (<44), are least likely to use CIH.
- Higher use rates among Hispanic men

Summary and Implications

- More women than men Veterans may use CIH to advance wellness and avoid disability
- More men than women may use CIH to treat disabling physical and behavioral illnesses.
 - Expand CIH engagement in ways that are tailored to gender.

Summary and Implications

- Black women are the least likely of women Veterans to use CIH, no matter their age.
 - Black women are a significant and growing proportion of the veteran population overall (U.S. Department of Veterans Affairs, 2016).
 - Among Veterans with chronic non-cancer pain, Black patients less likely to be prescribed opioids vs Whites (Burgess et al., 2014), and less likely to be monitored by a pain specialist (Hausmann et al., 2013).
 - Black women Veterans may be experiencing significant unmet needs for CIH services that, when combined with inadequate receipt of other types of pain care, could heighten their risk for differentially poorer health outcomes.

Summary and Implications

- More research needed to understand why higher rates of CIH use by Hispanic women and men Veterans compared to their similarly-aged race/ethnicity counterparts.
- Women and men Veterans with chronic musculoskeletal pain have significant mental and physical health conditions, in addition to pain diagnoses.
 - Mind-body whole health approaches.

Limitations

- Results may be impacted by omitted variable bias
 - Pain ascertainment and severity, and physician and patient attitudes, knowledge, and preferences regarding CIH services
- Findings may not be representative
 - Military Veterans who are older than age 54, treated in other types of healthcare settings, how Veterans are being treated more recently
- Several potential reporting biases
 - Administrative EHR, race/ethnicity

Strengths

- Large and diverse Veteran population
- Capitalized on VA EHR system
 - facilitates linking diagnosis and health services utilization records
- Contribute new knowledge
 - gender-specific correlates of musculoskeletal pain and the factors that might explain differences in CIH use

Conclusions

- Among military Veterans with chronic musculoskeletal pain, there is differential use of CIH therapies by gender, race/ethnicity, and age.
- These differences are important because they might be contributing to disparities in pain and opioid use.
- Findings suggest VA clinicians might want to tailor their CIH engagement efforts to be sensitive to gender, race/ethnicity, and age.



Editor's Choice

Gender Differences in Use of Complementary and Integrative Health by U.S. Military Veterans with Chronic Musculoskeletal Pain



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A B S T R A C T

Aims: The Veterans Health Administration promotes evidence-based complementary and integrative health (CIH) therapies as nonpharmacologic approaches for chronic pain. We aimed to examine CIH use by gender among veterans with chronic musculoskeletal pain, and variations in gender differences by race/ethnicity and age.

Methods: We conducted a secondary analysis of electronic health records provided by all women ($n = 79,537$) and men ($n = 389,269$) veterans age 18 to 54 years with chronic musculoskeletal pain who received Veterans Health Administration-provided care between 2010 and 2013. Using gender-stratified multivariate binary logistic regression, we examined predictors of CIH use, tested a race/ethnicity-by-age interaction term, and conducted pairwise comparisons of predicted probabilities.

Results: Among veterans with chronic musculoskeletal pain, more women than men use CIH (36% vs. 26%), with rates ranging from 25% to 42% among women and 15% to 29% among men, depending on race/ethnicity and age. Among women, patients under age 44 who were Hispanic, White, or patients of other race/ethnicities are similarly likely to use CIH; in contrast, Black women, regardless of age, are least likely to use CIH. Among men, White and Black patients, and especially Black men under age 44, are less likely to use CIH than men of Hispanic or other racial/ethnic identities.

Conclusions: Women veteran patients with chronic musculoskeletal pain are more likely than men to use CIH therapies, with variations in CIH use rates by race/ethnicity and age. Tailoring CIH therapy engagement efforts to be sensitive to gender, race/ethnicity, and age could reduce differential CIH use and thereby help to diminish existing health disparities among veterans.

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Read the study: <http://ow.ly/FiRL30IJ5F2> and media announcement: <http://ow.ly/tJrs30lQHQg>

Use of Complementary and Integrated Health: A Retrospective Analysis of U.S. Veterans with Chronic Musculoskeletal Pain Nationally.

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Abstract

OBJECTIVE: To partially address the opioid crisis, some complementary and integrative health (CIH) therapies are now recommended for chronic musculoskeletal pain, a common condition presented in primary care. As such, healthcare systems are increasingly offering CIH therapies, and the Veterans Health Administration (VHA), the nation's largest integrated healthcare system, has been at the forefront of this movement. However, little is known about the uptake of CIH among patients with chronic musculoskeletal pain. As such, we conducted the first study of the use of a variety of nonherbal CIH therapies among a large patient population having chronic musculoskeletal pain.

MATERIALS AND METHODS: We examined the frequency and predictors of CIH therapy use using administrative data for a large retrospective cohort of younger veterans with chronic musculoskeletal pain using the VHA between 2010 and 2013 (n = 530,216). We conducted a 2-year effort to determine use of nine types of CIH by using both natural language processing data mining methods and administrative and CPT4 codes. We defined chronic musculoskeletal pain as: (1) having 2+ visits with musculoskeletal diagnosis codes likely to represent chronic pain separated by 30-365 days or (2) 2+ visits with musculoskeletal diagnosis codes within 90 days and with 2+ numeric rating scale pain scores ≥ 4 at 2+ visits within 90 days.

RESULTS: More than a quarter (27%) of younger veterans with chronic musculoskeletal pain used any CIH therapy, 15% used meditation, 7% yoga, 6% acupuncture, 5% chiropractic, 4% guided imagery, 3% biofeedback, 2% t'ai chi, 2% massage, and 0.2% hypnosis. Use of any CIH therapy was more likely among women, single patients, patients with three of the six pain conditions, or patients with any of the six pain comorbid conditions.

CONCLUSIONS: Patients appear willing to use CIH approaches, given that 27% used some type. However, low rates of some specific CIH suggest the potential to augment CIH use.

KEYWORDS: alternative medicine; chronic pain; musculoskeletal pain; veterans

Taylor SL, Herman PM, Marshall NJ, Zeng Q, Yuan A, Chu K, Shou Y, Morioka C, Lorenz K. Use of Complementary and Integrated Health: A Retrospective Analysis of U.S. Veterans with Chronic Musculoskeletal Pain Nationally. J Altern Complement Med. 2018 Oct 12. doi: 10.1089/acm.2018.0276.

Final Points

- Since this study, CIH provision has accelerated, in part due to CARA mandate.
- As such, we also examined CIH use using a different methodology - a national survey of Veterans.
- That survey found 52% of Veterans used some type of CIH in the past year, but very little of that was VA-based.
- We expect that % to increase, as Veterans learn that CIH therapies are available at their VA.

Thank you!

For questions, please contact:

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