

Behavioral Health in Military Veterans: Challenges and Opportunities for Health Promotion

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*The views expressed in this presentation do not necessarily represent those of the
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Prevalence of chronic conditions, associated behaviors, and the interrelationship between health behaviors

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Chronic physical and mental health conditions generally equal or higher among Veterans

Prevalence (%) of Chronic Health Conditions by Military and Veteran Status 2010

	Veteran	Civilian	Reserves/ Guard	Active Duty
<u>Health conditions</u>	M/F	M/F	M/F	M/F
Cardiovascular disease	21*/9*	6/7	15/7	6/3
Diabetes	17*/8	8/9	13/8	5/5
Cancer	18*/14*	6/11	12/3	7/8
Depressive disorders	14*/27*	12/21	9/37	12/18
Anxiety disorders	11*/20*	9/16	10/32	15/10

Sample: BRFSS 2010; Sample = 13% Veterans that were 93% male/ 7% female
 (Male N = 169,390, Female N = 280,276); *p<0.05; weighted prevalence statistics; regression also adjusted for demo.
 Percentages rounded to nearest whole number, from: Hoerster et al., 2012. Am J PM. 43(5):483-489;
 Lehavot et al., 2012. Am J PM. 42(5):473-480

Chronic disease and condition prevalence is high, costly, and multimorbidity is common

- In a study of 5.2 million VA patients in FY 2010:
 - ~2/3 of patients had ≥ 1 (/28) Chronic Conditions; ~1/3 had ≥ 3 Chronic Conditions
 - Patients with ≥ 3 Chronic Conditions accounted for > 65% of VA healthcare costs
 - Most prevalent triad—diabetes, hyperlipidemia, hypertension (>25%)
 - Most costly triad—chronic heart failure, renal failure, COPD (Mean=\$82k; Median= \$58k)
- In a study among 700k VHA enrolled Veterans from FY2000-FY2004:
 - 5-year mortality rate increased with greater chronic condition comorbidity
- VA healthcare cost attributed to cigarette smoking in 2010:
 - ~\$2.7 billion (8% of total cost VA healthcare costs)
 - ~\$1.7 billion, from current smokers and ~1.0 billion from former smokers

Yoon et al., 2014. Med Care. 52(3)S31-36; Lee et al., 2007. JGIM. 22(S3)403-7; Barnett et al., 2015. NTR. 17(5)586-591

Health-risk behavior/factor prevalence varies by Veteran, civilian, and military status, and generally higher among Veterans in VA

- Overweight and obesity in:
 - 4.9 million VA patients in FY2013 = 78%; Obesity = 41% (2011-2012 Non-Vets-69% / 35%)
 - NHANES 2009-2012, obesity in Veterans = 43% vs. Non-Veterans = 34% (p<0.01; adjusted)
- Smoking prevalence:
 - BRFSS 2003-2007 pooled, age-adjusted, Veterans = 27.0% vs. Non-Veterans = 21% (p<0.01)

Prevalence (%) of Tobacco and Inactivity by Military and Veteran Status 2010				
	Veteran	Civilian	Res./ Guard	Active Duty
<u>Men</u>				
Cigarette smoking*	17.4	19.5	14.4	23.4
No exercise last 30 days*	24.6	21.5	20.0	13.3
<u>Women</u>				
Tobacco Use*	19.4	15.1	16.0	10.9
No exercise last 30 days	26.3	26.8	23.9	14.2
Hoerster et al., 2012. Am J PM. 43(5):483-489; Lehavot et al., 2012. Am J PM. 42(5):473-480				

- VA/DoD, 2014. Clinical Practice Guideline for Screening and Management of Overweight and Obesity [VIREC CDW VA patient data analysis].
- Ogden et al., 2014. JAMA. 311(8):806-814
- Fryar et al., 2016. Am J PM. 50(1):101-5
- Brown et al., 2010. JGIM. 25(2):147-9

Mortality has been found to occur much earlier among persons with serious mental illness

- As much as 25 years earlier according to a study among the a general population treated across 8 state mental health systems.
- This early mortality disparity is generally attributed to:
 - Higher chronic disease prevalence, especially heart disease, and more limited treatment for medical conditions as a result of fragmented medical and mental health care
 - Greater health-risk behaviors among those with SMI such as cigarette smoking, alcohol misuse, and illicit drug use
 - Lower SES
- In a brief report among Veterans in VA, the disparity appears to be much less, yet it remains
- Parks et al., 2006. Morbidity and Mortality in People with Serious Mental Illness. National Association of State Mental Health Programs Directors.
- Druss et al., 2010. JAMA. 303(19)1972-1973
- Kilbourne et al., 2015. Psychiatric Services. 60(5)589-589

Cumulative Survival and Health Behaviors for Men and Women, Aged 45-79 Years

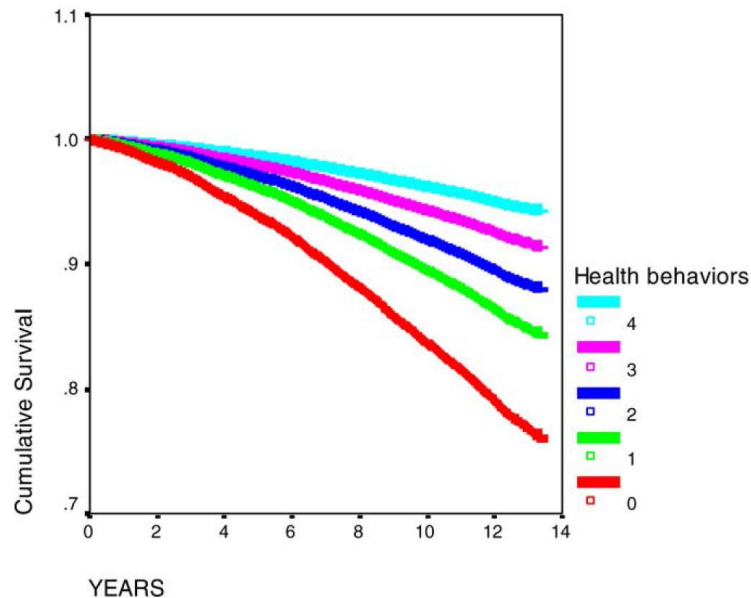


Figure 1. Survival Function According to Number of Health Behaviours in Men and Women Aged 45-79 Years without Known Cardiovascular Disease or Cancer, Adjusted for Age, Sex, Body Mass Index and Social Class, EPIC-Norfolk 1993-2006
doi:10.1371/journal.pmed.0050012.g001

Non-smoker

Physically active

FVI, 5 or more servings/day

Low alcohol intake

Associations between health-related behavior and mental health provide both challenges and opportunities for health promotion

- Negative HBs are highly comorbid in bi-directional associations with mental illness
(smoking, alcohol misuse, illicit drug use, poor diet, poor sleep)
(depression, PTSD, bi-polar disorder, schizophrenia)
(Sarris et al., 2014; Goldstein et al., 2009; Alvaro et al., 2013)
- Positive HBs (e.g., diet, physical activity) can improve mental health outcomes
(US PA Guidelines Advisory Committee Report; Sarris et al., 2014, Scheewe et al., 2013; Walsh, 2011)

There are also interrelationships between health behaviors, providing additional challenges and opportunities for health promotion

For example:

- Physical activity or dietary change can facilitate smoking cessation through reduction in withdrawal symptoms or weight management (Roberts et al., 2012; Leslie et al., 2012).
- Alcohol consumption can impair sleep (Ebrahim et al., 2013), whereas increased physical activity can improve sleep (McClain et al., 2014; Kredlow et al., 2015)
- There is a bi-directional association between dietary behavior and sleep (Peuhkuri et al., 2012; Chaput, 2014)

Putting it all together

There are multiple associations and interrelationships between health positive behaviors, mental health, and negative health behaviors, which provides challenges for the health of Veterans and their medical providers as well as opportunities for health promotion and behavioral health.

Sleep Health in Veterans

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Sleep is a critical yet overlooked health behavior

- Sleep is a basic biologic need responsible for a variety of emotion and memory consolidation, muscle and tissue repair, and stress hormone regulation
- Poor sleep is associated with a range of poor physical and mental health outcomes
- Stress and/or illness can trigger unhealthy, or maladaptive sleep behaviors. Chronic sleep problems arise when these maladaptive behaviors become the “norm”
- Unhealthy sleep behaviors often appear alongside decreased physical activity, poor diet, and/or substance abuse
- Sleep behaviors are modifiable yet are rarely addressed as part of comprehensive health assessments nor are they integrated into chronic disease management programs

Poor sleep in Veterans

- Most common sleep complaints include insomnia-like symptoms:
 - Trouble falling or staying asleep
 - Waking up earlier than desired
 - Sleep that is restless or unrefreshing
 - Poor sleep that causes significant daytime impairment or distress

War Cohort	Prevalence of sleep problems	Major Complaint
World War II, Korea, Vietnam <i>Alessi & Martin, 2012</i>	53% met diagnostic criteria for insomnia	Nighttime disturbances (trouble falling or staying asleep)
World War II, Korea, Vietnam <i>Hughes & Martin, 2013</i>	38% met diagnostic criteria for insomnia	Daytime disturbance; many older Veterans denied “poor sleep quality” despite meeting several clinical markers for insomnia diagnosis
Iraq & Afghanistan <i>Plumb, Peachey & Zelman, 2014</i>	89% reported overall sleep disturbance	Poor sleep is correlated with greater depression and PTSD symptoms
Iraq & Afghanistan <i>Hughes et al., 2015</i>	71% reported sleep disturbance	Short sleep duration (< 6 hours), nightmares

Challenges in assessing and treating sleep problems in Veterans

ASSESSMENT CHALLENGES

- Brief sleep screeners for use in primary care settings have not been developed or validated
- Some subgroups, including older Veterans deny poor sleep quality but otherwise meet criteria for a sleep disorder
- How might reports differ if assessments focused on healthy, restorative sleep instead of sleep problems?

VETERANS' ATTITUDES & PERCEPTIONS

- Many Veterans report providers do not routinely ask about sleep problems
- Behavioral treatments are preferred over pharmacological treatments
- “But doc, I’d be a better patient if you just helped me with my sleep problems!”

PROVIDERS' ATTITUDES & PERCEPTIONS

- Competing treatment needs and priorities
- Less knowledge about alternative treatments, including non-pharmacological options such as Cognitive Behavioral Therapy for Insomnia (CBT-I)
- More knowledge about “quick” treatment approaches including the use of sleeping pills or other sedating medications

Sleep and functional outcomes

- Among older Veterans, poor sleep (more nighttime awakenings, more daytime sleeping, longer sleep duration) is associated with greater functional impairment
- Among older non-Veterans, sleep problems, including poor sleep quality and more daytime napping, predict a variety of negative outcomes including incident depression, reduced rehabilitation, greater functional decline, and premature mortality
- While randomized controlled trials of behavioral interventions have demonstrated significant improvements in older Veterans' sleep, few have been powered to look at changes in secondary outcomes including functional performance, overall health, or quality-of-life
- Additional research is needed to better understand whether improving sleep in Veterans bolsters functional and rehabilitation outcomes and helps to maintain functional independence

Health Promotion in Veterans: A Role for Physical Activity

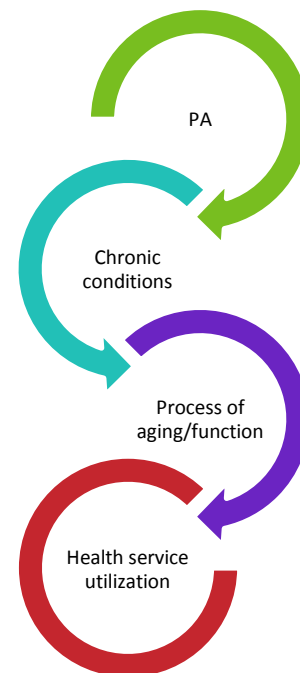
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Why Physical Activity is Important

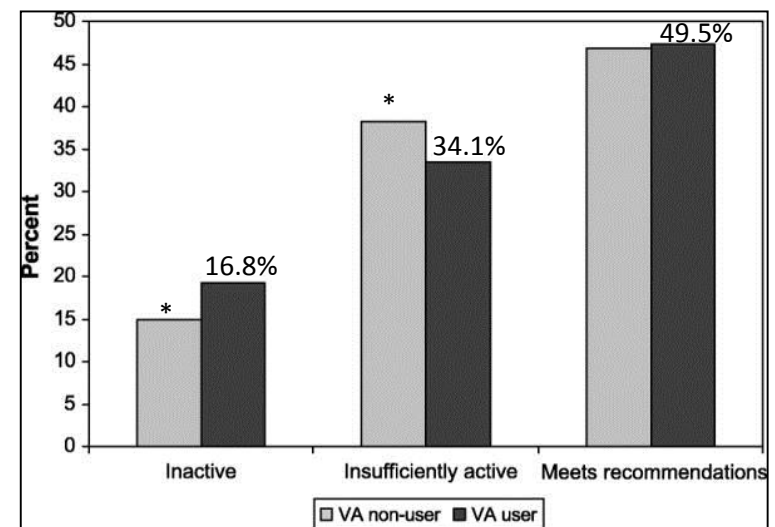
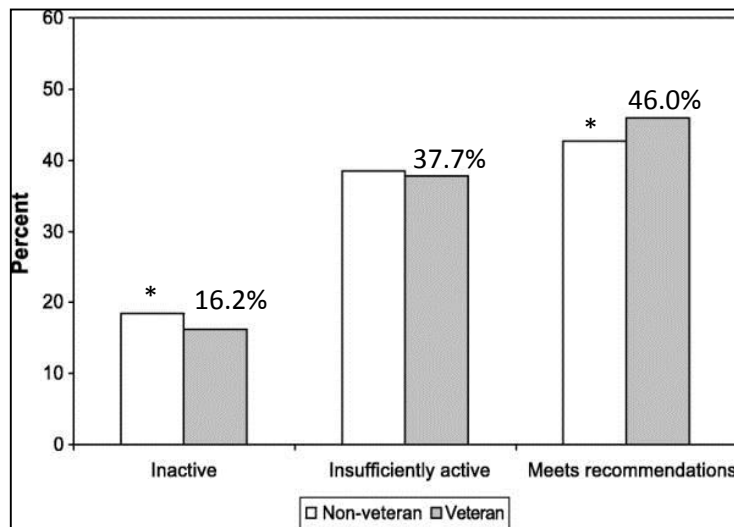


- Physical activity as both a primary and secondary prevention strategy
 - Function (physical & cognitive)
 - Mental health
 - Cardiovascular risk reduction
- Sedentary lifestyle one of the 5 major risk factors for CVD
 - Associated with increasing prevalence of obesity



Exploring the Activity Paradox in Veterans

- Veterans are more active...

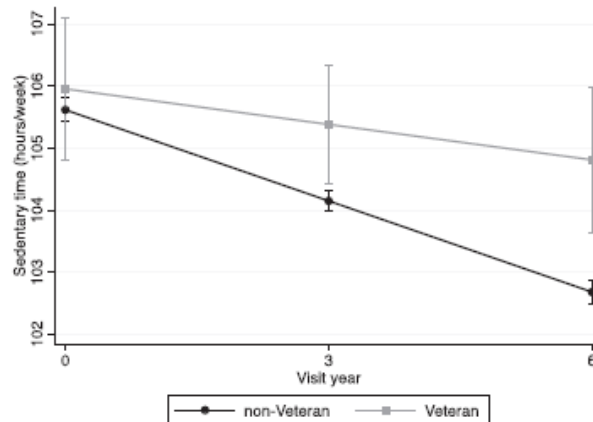
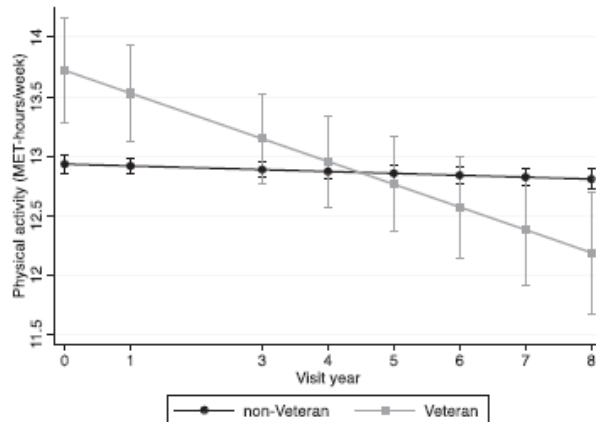


- Take-home message: ~60% of veterans are inactive or insufficiently active



Longitudinal Trajectories of PA in Veterans

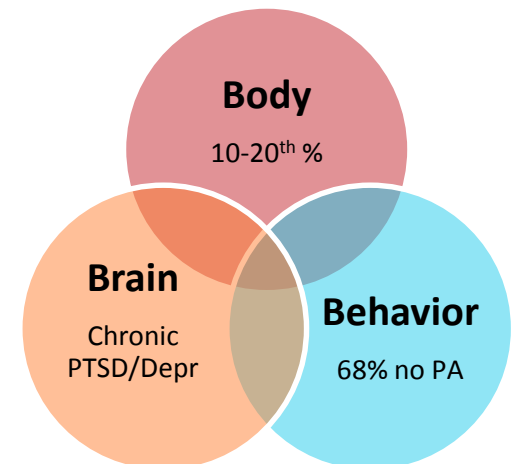
- Transition from military to civilian life
- Different trajectories in veteran vs. non-veteran females (WHI)



- Individual factors associated with physical activity in veterans:
 - Age
 - BMI
 - Mental illness (PTSD) → Premature functional aging

The Perfect Storm: Aging, PTSD, and Inactivity

- Significant physical comorbidities and early mortality
 - Chronic health conditions (e.g., OW/obesity-82.8%, dyslipidemia, hypertension, diabetes, cardiovascular disease)
 - Neurocognitive conditions (e.g., dementia, long-lasting dysregulation of neural networks)
 - Pain syndrome
 - Functional impairment
- These associations are particularly strong in older age groups of veterans...attributed to cumulative effects of chronic PTSD and poor self-care
- Significant behavioral deficits
 - Tobacco use
 - Substance use/dependence
 - Sleep disorders
 - Poor chronic disease management
 - Poor diet
 - Lack of exercise



Physical Activity Promotion Efforts in Veterans

- Few published studies exploring exercise interventions to improve health and physical function in (older) veterans
 - Veteran perceptions:
 - Reduce stress , important for maintaining health , and worried about gaining weight
 - Setting: exercising by him/herself (46%), with one or two friends (49%), exercising in a group (22%)
 - Limitations: health problems, pain, depression, motivation
 - The importance of tailoring
- Additional research exploring implementation and dissemination of these programs in VHA
 - Patient-centered care

Points for Discussion

- State of health behavior assessment/behavioral health interventions in VHA
 - MOVE!
 - Sleep health education materials
 - Health coaching programs
 - Identifying points of intervention and provider champions
- Future research, clinical, and policy considerations
 - Research & clinical agenda(s) focused on health behaviors and clinical interventions to promote health behavior/behavior change
 - Implementation of (multicomponent) health behavior interventions/weight loss programs
 - VA/DoD collaborations