

# WOMEN VETERANS IN THE WOMEN'S HEALTH INITIATIVE



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# Women Veterans in the Women's Health Initiative

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- Overview
- Healthy Aging
- Diseases and Conditions
- Menopause Related
- Mortality



The Gerontologist, February 2016

[http://gerontologist.oxfordjournals.org/content/56/Suppl\\_1.toc](http://gerontologist.oxfordjournals.org/content/56/Suppl_1.toc)

<http://gerontologist.oxfordjournals.org/content/56/1/115.full.pdf+html>

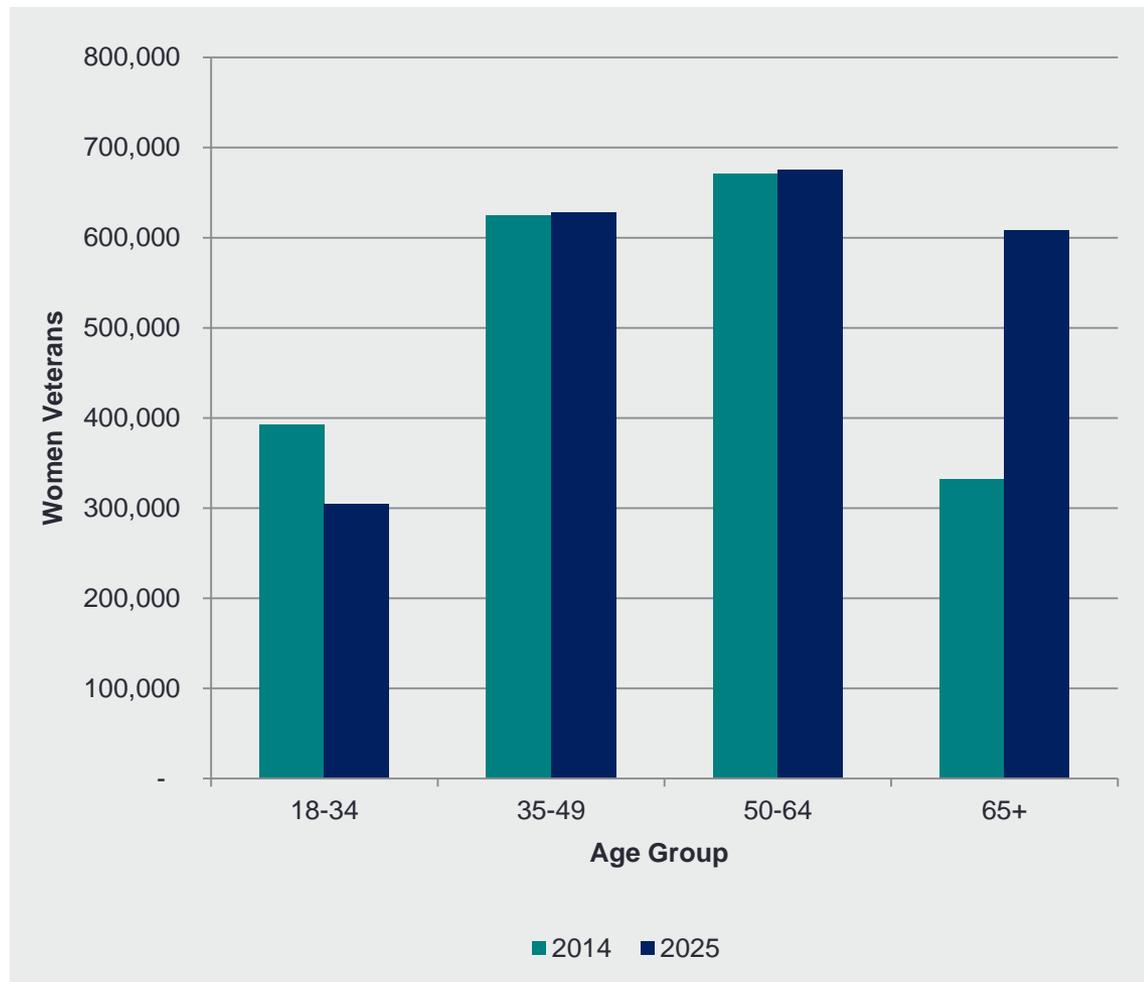
# What Motivated This Research in Older Women Veterans?

## Unique opportunity to:

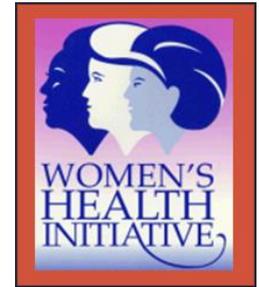
Examine positive and negative associations of military exposure

Address health behaviors and increased risk for disease in later life between women Veterans and non-Veterans

Begin clinical and research preparation for the projected 83% increase in older women Veterans between 2014-2025



# Women's Health Initiative (WHI)



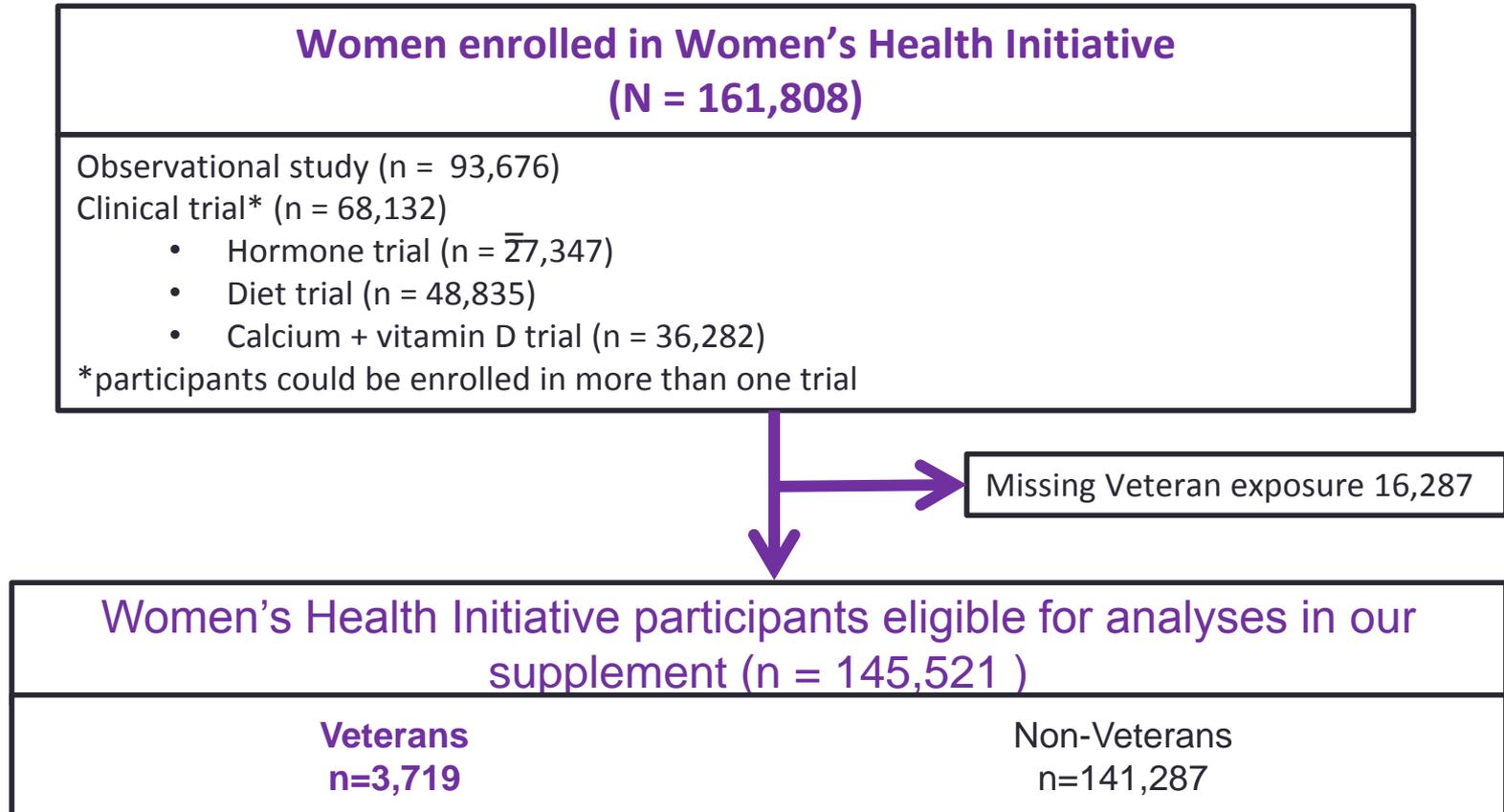
- Goal: Answer major questions about postmenopausal women's health (cancers, heart disease, osteoporosis-related bone fractures)
- Vast scientific undertaking
  - 161,808 participants from 40 U.S. centers followed up to 12 years in main study (1993-2005)
  - 115,403 participants enrolled in WHI Extension Study 2005-2010
  - 93,500 participants enrolled in WHI Extension Study 2010-2015

# WHI Eligibility Criteria

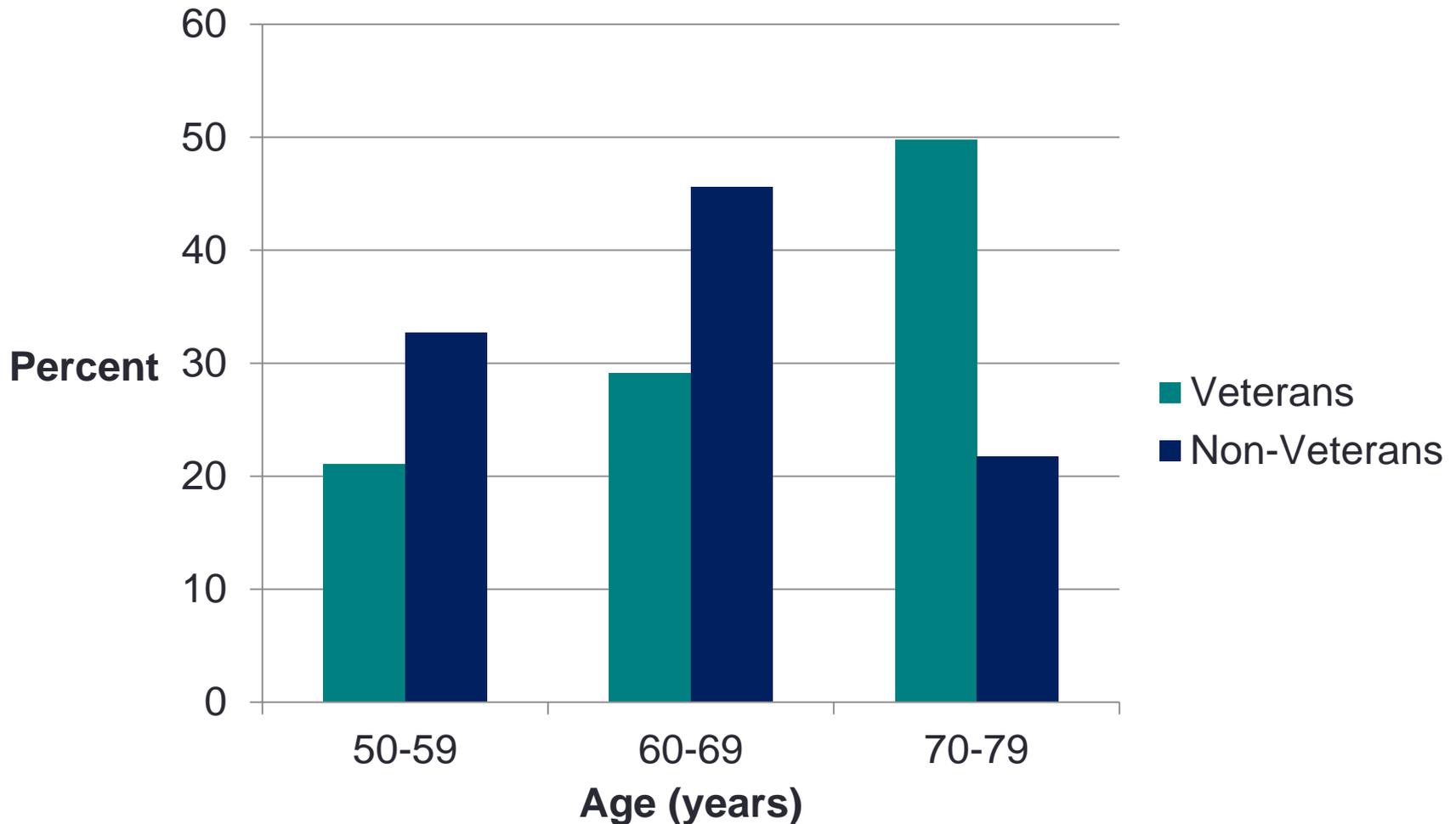
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- General inclusion criteria
  - Aged 50 to 79 years
  - Postmenopausal
  - Planning to reside in the area for at least 3 years
  - Able/willing to provide written informed consent
- Additional eligibility criteria specific to each study component, related to:
  - Safety
  - Competing risk
  - Adherence/retention

# Women Veterans in the WHI



# Age Distribution of Women in the WHI: Veterans vs. Non-Veterans



# Who are the Women Veterans in the WHI?



- 3,719 women Veterans in WHI  
~ 3% of total WHI Recruits
- Health similar to non-Veterans
- Demographically distinct from non-Veterans—
  - Older
  - Highly Educated
  - Disproportionately Caucasian
  - Less Likely to be Married



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Research Article

## **Military Generation and Its Relationship to Mortality in Women Veterans in the Women’s Health Initiative**

Donna L. Washington, MD, MPH,<sup>1,2,\*</sup> Chloe E. Bird, PhD,<sup>3</sup> Michael J. LaMonte, PhD, MPH,<sup>4</sup> Karen M. Goldstein, MD, MSPH,<sup>5</sup> Eileen Rillamas-Sun, PhD, MPH,<sup>6</sup> Marcia L. Stefanick, PhD,<sup>7</sup> Nancy F. Woods, PhD, RN, FAAN,<sup>8</sup> Lori A. Bastian, MD, MPH,<sup>9</sup> Margery Gass, MD,<sup>10</sup> and Julie C. Weitlauf, PhD<sup>11,12</sup>

Special thanks to: Gayle Reiber, PhD, MPH, Andrea LaCroix, PhD, MPH, & Erica Ma, BA

# Mortality & Military Generation

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- Elevated rate of all-cause mortality was found among WHI women Veterans relative to non-Veterans, even after adjustment for age & common health risks (Weitlauf et.al., 2015)
  - Women Veterans' elevated mortality rates are in stark contrast to findings from studies of Vietnam women Veterans of a younger age
- Generational differences in Veteran mortality may exist
  - Women Veterans' sociodemographic characteristics, military roles and exposures, & associated health risks have changed over time
- Identifying causes of mortality, particularly if they differ by generation, is essential for informing prevention, clinical practice and policy

# Study Objective

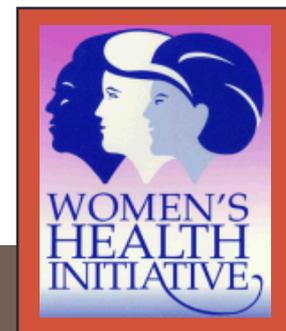
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Evaluate older women's mortality rates and causes across Veteran status and generation

- Determine if Veteran status is associated with higher rates of all-cause mortality within two military generations of older women
- Compare cause-specific mortality by Veteran status within each generation

# Methods

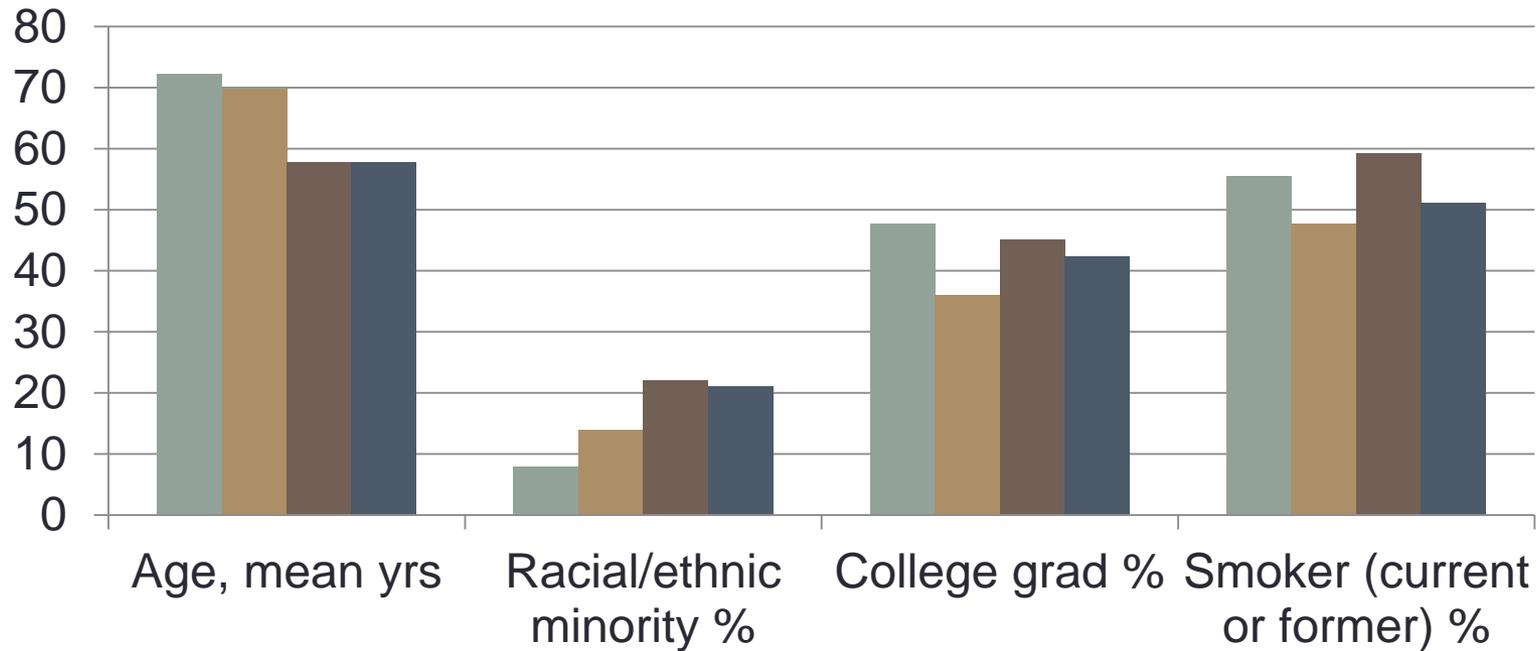
- WHI participants – both Veterans (n=3,719) and non-Veterans (n=141,800) categorized into military generation based on their birth cohort



Military generation	Birth year	Age consistent with service during
Pre-Vietnam	1913-1931	WWII & Korean War
Vietnam/After	1932-1948	Vietnam War & early post-Vietnam era

- Participants prospectively followed for mean of 15.2 years
- Mortality ascertainment primarily through National Death Index and/or physician adjudication; causes of death coded according to ICD-9-CM codes
- Cox proportional hazards models for each generation, adjusted for: model 1: demographics and WHI study arm; model 2: model 1 + health behaviors and health risks; model 3: model 2 + hypertension & number of comorbidities

# Baseline Characteristics by Generation and Veteran Status



Pre-Vietnam Gen. Veteran

Pre-Vietnam Gen. non-Vet.

Vietnam/After Gen. Veteran

Vietnam/After Gen. non-Vet.

# All-cause Mortality Rates by Generation and Veteran Status

	Pre-Vietnam		Vietnam and After	
	Veteran	Non-Vet.	Veteran	Non-Vet.
Number of deaths	1,051	20,430	155	7,953
Age-adjusted rate / 1000 person-years	21.7	18.9	9.2	7.9
Adjusted HR*				
Model 1	<b>1.16 (1.09 - 1.23)</b>	Ref.	1.16 (0.99 - 1.36)	Ref.
Model 2	<b>1.14 (1.07 - 1.21)</b>	Ref.	1.08 (0.92 - 1.27)	Ref.
Model 3	1.08 (0.98 - 1.19)	Ref.	1.09 (0.86 - 1.37)	Ref.

\*HR = Hazard Ratio;

Co-variates – Model 1: age, race/ethnicity, education, study assignment;

Model 2: model 1 + smoking, physical activity, alcohol use, BMI, depression;

Model 3: model 2 + hypertension, medical comorbidities

# Cause-specific Mortality Rates for Pre-Vietnam Generation by Veteran Status

	<b>Cancer</b>		<b>Cardiovascular Disease</b>		<b>Trauma</b>	
Age-adjusted rate / 1000 person-years	Veteran 6.8	Non-Vet. 5.6	Veteran 6.9	Non-Vet. 5.8	Veteran 0.8	Non-Vet. 0.5
Adjusted HR for Veterans*						
Model 1	<b>1.13 (1.00 - 1.29)</b>		<b>1.12 (1.00 - 1.25)</b>		<b>1.45 (1.03 - 2.06)</b>	
Model 2	1.09 (0.96 - 1.25)		<b>1.13 (1.01 - 1.27)</b>		<b>1.46 (1.02 - 2.10)</b>	
Model 3	1.02 (0.84 - 1.24)		1.11 (0.94 - 1.30)		1.01 (0.54 - 1.91)	

\*HR = Hazard Ratio, non-Veterans are the reference group;  
 Co-variates – Model 1: age, race/ethnicity, education, study assignment;  
 Model 2: model 1 + smoking, physical activity, alcohol use, BMI, depression;  
 Model 3: model 2 + hypertension, medical comorbidities

# Cause-specific Mortality Rates for Vietnam/After Generation by Veteran Status

	<b>Cancer</b>		<b>Cardiovascular Disease</b>		<b>Trauma</b>	
Age-adjusted rate / 1000 person-years	Veteran 2.9	Non-Vet. 3.4	Veteran 2.6	Non-Vet. 1.8	Veteran 0.4	Non-Vet. 0.25
Adjusted HR for Veterans*						
Model 1	1.07 (0.84 - 1.37)		0.98 (0.68 - 1.42)		<b>2.93 (1.64 - 5.23)</b>	
Model 2	1.00 (0.78 - 1.29)		0.81 (0.54 - 1.22)		<b>2.90 (1.58 - 5.31)</b>	
Model 3	0.98 (0.69 - 1.38)		0.82 (0.47 - 1.46)		<b>3.93 (1.83 - 8.43)</b>	

\*HR = Hazard Ratio;

Co-variates – Model 1: age, race/ethnicity, education, study assignment;

Model 2: model 1 + smoking, physical activity, alcohol use, BMI, depression;

Model 3: model 2 + hypertension, medical comorbidities

# Clinical Implications

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- All health care providers should be aware of the unique health risks and needs of women Veterans
- Efforts to identify and modify salient health risk behaviors specific to each military generation are needed

# Research Implications

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- Research should be directed toward identifying predictors of premature mortality
- Since health behavior and health risks change over time, with women Veterans having more adverse health behavior trajectories compared to non-Veterans,\* the association of trajectories in health behaviors with Veterans' mortality rates should be examined
- Mechanisms underlying Vietnam/After generation Veteran trauma-related mortality should be elucidated

\*Washington et al., Gerontologist 2016, Vol. 56, No. S1, S27-S39.

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Research Article

## **Alcohol Consumption Levels and All-Cause Mortality Among Women Veterans and Non-Veterans Enrolled in the Women's Health Initiative**

Tracy L. Simpson, PhD,<sup>\*.1,2</sup> Eileen Rillamas-Sun, PhD, MPH,<sup>3,4</sup> Keren Lehavot, PhD,<sup>2,5</sup> Christine Timko, PhD,<sup>6,7</sup> Amy Rubin, PhD,<sup>8,9</sup> Michael A. Cucciare, PhD,<sup>10,11</sup> Emily C. Williams, PhD, MPH,<sup>5,12</sup> Claudia B. Padula, PhD,<sup>7,13</sup> Julie R. Hunt, PhD,<sup>3</sup> and Katherine J. Hoggatt, PhD, MPH<sup>14,15</sup>

Special thanks to: Gayle Reiber, PhD, MPH, Andrea LaCroix, PhD, MPH, & Erica Ma, BA

# Women Veterans and Alcohol

- Most information on women Veterans' alcohol use is from VA patients
- Little research compares women Veterans and women non-Veterans
- Four studies found no discernable differences between the groups on binge drinking, heavy drinking, and positive screens for alcohol misuse



# Women, Alcohol, and Mortality

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- Numerous large scale epidemiological studies have found increased risk of early mortality for key groups of women drinkers when they are compared to Moderate Drinkers
  - Lifelong abstainers
  - Former drinkers
  - Current heavy drinkers
- There is no previous research on whether women Veterans' and non-Veterans' relationships between alcohol consumption patterns and mortality are comparable

Bertoia et al., 2013; Di Castelnuovo, Costanzo, Bagnardi, Donati, Iacoviello, & de Gaetano, 2006; Freiberg, Chang, Kraemer, Robinson, Adams-Campbell, & Kuller, 2009; Fuchs et al., 1995; Klatsky & Udaltsova, 2007; Liao, McGee, Cao, & Cooper, 2000; McCaul, Almeida, Hankey, Jamrozik, Byles, & Flicker, 2010; Wang et al., 2014

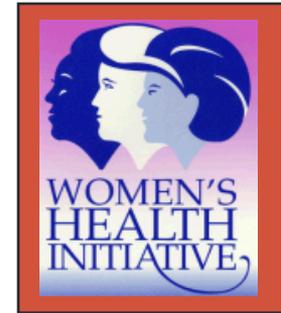
# Study Questions

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- Are the rates of membership in various alcohol consumption groups the same for women Veterans and non-Veterans?
- Are mortality rates within each alcohol consumption group comparable for women Veterans and non-Veterans?
- Does Veteran status modify the relationship between alcohol consumption and mortality rates?



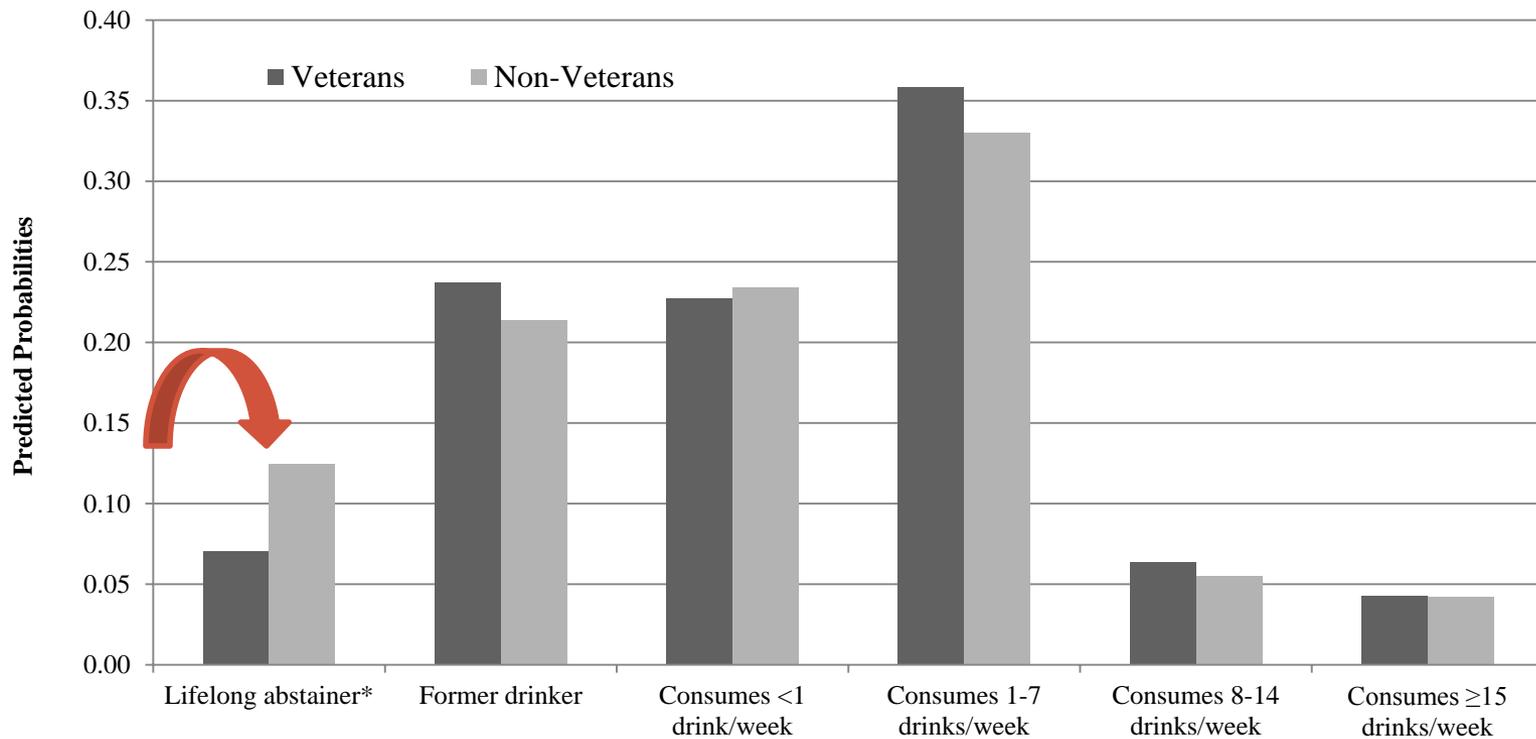
# Study Methods



- **Participants** were women from both the WHI observational study and the clinical trials who had baseline data on Veteran status (N = 145,521)
- **Alcohol consumption** was assessed with the Food Frequency Questionnaire to form 6 consumption categories
  - Lifelong abstainers, former drinkers, < 1 per week, 1-7 per week, 8-14 per week, 15+ per week
  - Very heavy drinkers and illicit drug users were excluded from WHI
- **Mortality** data were via National Death Index through 2014
- **Covariates** included age, race/ethnicity, marital status, living alone, family income, educational attainment, pack years of tobacco use, BMI, physical activity

# Alcohol Consumption

Age-adjusted predicted probabilities of being in an alcohol consumption group by Veteran status



\* $p < 0.01$  comparing Veterans to non-Veterans

# Mortality Rates by Drinking Behavior and Veteran Status

	Age Adjusted Rate*
<b>Veterans</b>	
Lifelong abstainer	14.4
Former drinker	20.6 <sup>a</sup>
Consumes <1 drink/week	14.4
Consumes 1 to 7 drinks/week	14.1 <sup>a</sup>
Consumes 8 to 14 drinks/week	13.4
Consumes 15 or more drinks/week	20.4
<b>Non Veterans</b>	
Lifelong abstainer	13.7
Former drinker	17.1 <sup>a</sup>
Consumes <1 drink/week	12.6
Consumes 1 to 7 drinks/week	11.6 <sup>a</sup>
Consumes 8 to 14 drinks/week	12.2
Consumes 15 or more drinks/week	15.8

\* Standard population is all WHI participants in age decades.

a Age-adjusted mortality rate differences between Veterans and non-Veterans; p=0.01

# Mortality Hazard Ratios with Lifelong Abstainers as Referent

	Fully Adjusted HR* (95% CI)
<b>Veterans</b>	
Lifelong abstainer	Ref
Former drinker	1.05 (0.81 - 1.38)
<1 drink/week	0.87 (0.66 - 1.15)
1 to 7 drinks/week	0.84 (0.64 - 1.09)
8 to 14 drinks/week	0.71 (0.50 - 1.01)
15 or more drinks/week	0.95 (0.65 - 1.39)
<b>Non Veterans</b>	
Lifelong abstainer	Ref
Former drinker	1.06 (1.02 - 1.11)
<1 drink/week	0.84 (0.80 - 0.88)
1 to 7 drinks/week	0.80 (0.76 - 0.83)
8 to 14 drinks/week	0.79 (0.74 - 0.85)
15 or more drinks/week	0.91 (0.85 - 0.98)

- Among **women Veterans**, no statistically significant differences between the lifelong abstainer referent group and the other groups of drinkers
- Among **women non-Veterans**, infrequent, moderate, and moderately heavy drinkers had significantly lower mortality rates than the lifelong abstainer referent group
- **Veteran status did not modify the relationships between consumption and mortality in the fully adjusted model**
- Patterns of HR's are very similar

Darker shading indicates significant HR's

# Mortality Hazard Ratios with Moderate Drinkers as Referent

	Fully Adjusted HR* (95% CI)
<b>Veterans</b>	
Lifelong abstainer	1.19 (0.92 - 1.55)
Former drinker	1.26 (1.07 - 1.48)
<1 drink/week	1.04 (0.87 - 1.24)
1 to 7 drinks/week	Ref
8 to 14 drinks/week	0.85 (0.64 - 1.13)
15 or more drinks/week	1.14 (0.83 - 1.55)
<b>Non Veterans</b>	
Lifelong abstainer	1.26 (1.20 - 1.32)
Former drinker	1.34 (1.29 - 1.39)
<1 drink/week	1.05 (1.01 - 1.09)
1 to 7 drinks/week	Ref
8 to 14 drinks/week	1.00 (0.93 - 1.06)
15 or more drinks/week	1.15 (1.08 - 1.23)

Darker shading indicates significant HR's

- Among **women Veterans**, only the former drinkers had significantly higher mortality rates from the moderate drinker referent group
- Among **women non-Veterans**, lifelong abstainers, infrequent, former drinkers, and heavy drinkers had significantly higher mortality rates than the moderate drinker referent group
- **Veteran status did not modify the relationships between consumption and mortality in the fully adjusted model**
- Patterns of HR's are very similar

# Observations

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- Women Veterans are less likely to be lifelong abstainers
- Within each drinker group, women Veterans have consistently higher mortality rates than women non-Veterans
  - Other factors, such as smoking, may account for this
- In fully adjusted models, Veteran status does not appear to modify the relationships between drinker group and all-cause mortality



# Clinical Implications

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- Risk of early mortality is elevated for **former drinkers**
  - Providers should screen for past drinking among current abstainers and assess for other risk factors that may be contributing to elevated risk
- Risk of early mortality is elevated for **heavy drinkers**
  - Heavy drinkers who abstain or reduce drinking mitigate their mortality risk
- Risk of early mortality is NOT elevated for **moderately heavy drinkers** (8-14 per week)
  - ...and these women may be at elevated risk for other negative health outcomes including skin and breast cancer

Roerecke, Gual, & Rehm, 2013

Kubo, Henderson, Desai, Wactawski-Wende, Stefanick, & Tang, 2014

Allen et al., 2009; Li et al., 2010

# Future Research

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- Smoking behavior was accounted for in our models but is important to evaluate in its own right

	<b>Veteran n=3719</b>	<b>Non-Veteran n=141802</b>	<b>p-value</b>
Smoking Status, n (%)			<0.0001
Non-Smoker	44.8%	51.1%	
Past Smoker	46.5%	42.0%	
Current Smoker	8.7%	6.8%	
Pack-years, mean (SD)	13.4 (21.9)	9.9 (18.5)	<0.0001

- and as it may interact with alcohol consumption

# Conclusions

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- Our findings are in line with the larger literature indicating that the *amount* of alcohol consumed is key to whether it is protective or risky for women
- Providers may counsel Veteran and non-Veteran women in similar ways regarding safe and unsafe levels of alcohol consumption
- Providers are encouraged to pay particular attention to additional risk factors for early mortality among former drinkers and moderately heavy drinkers

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Research Article

## **Mortality in Postmenopausal Women by Sexual Orientation and Veteran Status**

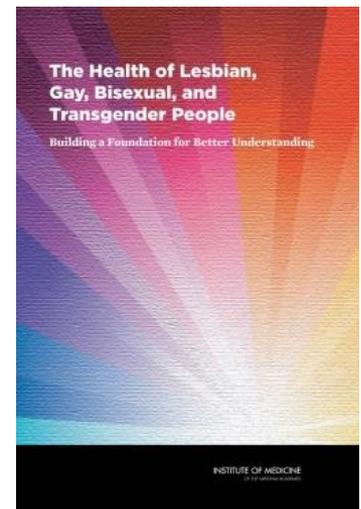
Keren Lehavot, PhD,<sup>\*,1</sup> Eileen Rillamas-Sun, PhD, MPH,<sup>2</sup> Julie Weitlauf, PhD,<sup>3,4</sup> Rachel Kimerling, PhD,<sup>5</sup> Robert B. Wallace, MD, MSc,<sup>6</sup> Anne G. Sadler, PhD, RN,<sup>7</sup> Nancy Fugate Woods, PhD, RN, FAAN,<sup>8</sup> Jillian C. Shipherd, PhD,<sup>9,10</sup> Kristin Mattocks, PhD, MPH,<sup>11,12</sup> Dominic J. Cirillo, MD, PhD,<sup>13</sup> Marcia L. Stefanick, PhD, FAHA,<sup>14</sup> and Tracy L. Simpson, PhD<sup>15</sup>

Special thanks to: Gayle Reiber, PhD, MPH, Andrea LaCroix, PhD, MPH, & Erica Ma, BA

# Lesbian & Bisexual (LB) Women's Health

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- **LB women identified as at risk for health disparities<sup>1</sup>**
  - Poorer mental health
  - Higher rates of health risk behaviors
  
- **Similar patterns for older LB women<sup>2</sup>**
  - WHI study found that compared to heterosexual women, LB women reported:
    - Poorer mental health
    - ↑ alcohol use and smoking
    - ↑ disability and chronic health conditions
    - ↓ social support



<sup>1</sup> Institute of Medicine, 2011; <sup>2</sup> Valanis et al., 2000

# Mortality among Sexual Minorities

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- **Limited research with varied results**
- Two U.S. studies found no differences in all-cause mortality<sup>1,2</sup>
- Others have shown increased mortality from breast cancer<sup>1,3</sup> and suicide<sup>1,2</sup>

# What about LB Veterans?

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25% of LB women served in military, compared to 6% of heterosexual women<sup>1</sup>



<sup>1</sup> Blosnich et al., 2013

# Incorporating Lesbian and Bisexual Women into Women Veterans' Health Priorities

Keren Lehavot, PhD<sup>1,2</sup> and Tracy L. Simpson, PhD<sup>1,2</sup>

<sup>1</sup>VA Puget Sound Health Care System, Seattle, WA, USA; <sup>2</sup>Department of Psychiatry and Behavioral Sciences University of Washington, Seattle, WA, USA.

Relative to the general population, lesbian and bisexual (LB) women are overrepresented in the military and are significantly more likely to have a history of military service compared to all adult women. Due to institutional policies and stigma associated with a gay or lesbian identity, very little empirical research has been done on this group of women veterans. Available data suggest that compared to heterosexual women veterans, LB women veterans are likely to experience heightened levels of prejudice and discrimination, victimization, including greater incidence of rape, as well as adverse health and substance use disorders. They are also likely to encounter a host of unique issues when accessing health care, including fears of insensitive care and difficulty disclosing sexual orientation to Veterans Health Administration (VHA) providers. Training of staff and providers, education efforts, outreach activities, and research on this subpopulation are critical to ensure equitable and high quality service delivery.

**KEY WORDS:** women veterans; lesbian and bisexual women; sexual minority veterans.

J Gen Intern Med 2012;27(suppl 2):S609-14

DOI: 10.1007/s11606-012-2291-2

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Researchers, providers, and educators must address this subpopulation of women veterans and their specific needs if we are to fulfill the mission of serving America's women veterans and providing equitable health care.

## WOMEN VETERANS AND LB WOMEN: STRIKING SIMILARITIES IN TRAUMA EXPERIENCE

Among women veterans in general, a growing body of evidence has documented high rates of trauma across the lifespan and adverse health outcomes. A review of the literature indicated that almost all women veterans report a traumatic event at some point in their lives (81–93 %), and estimates of lifetime sexual assault, childhood sexual and physical abuse, adult sexual and physical assault, and intimate partner violence exceed estimates among nationally representative samples of women.<sup>17</sup> Direct comparisons of women veterans to civilians parallel these findings.<sup>18,19</sup> Once they enter the military, women veterans may experience additional forms of violence, including military sexual trauma (MST; reported by 20–40 %) and combat exposure.<sup>17,20</sup> These high rates of trauma exposure appear to translate into heightened risk of poor mental health and

# Current Study

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Examined the risk of all-cause and cancer-specific mortality of LB Veterans compared to:

1. LB non-Veterans
2. Heterosexual Veterans
3. Heterosexual non-Veterans

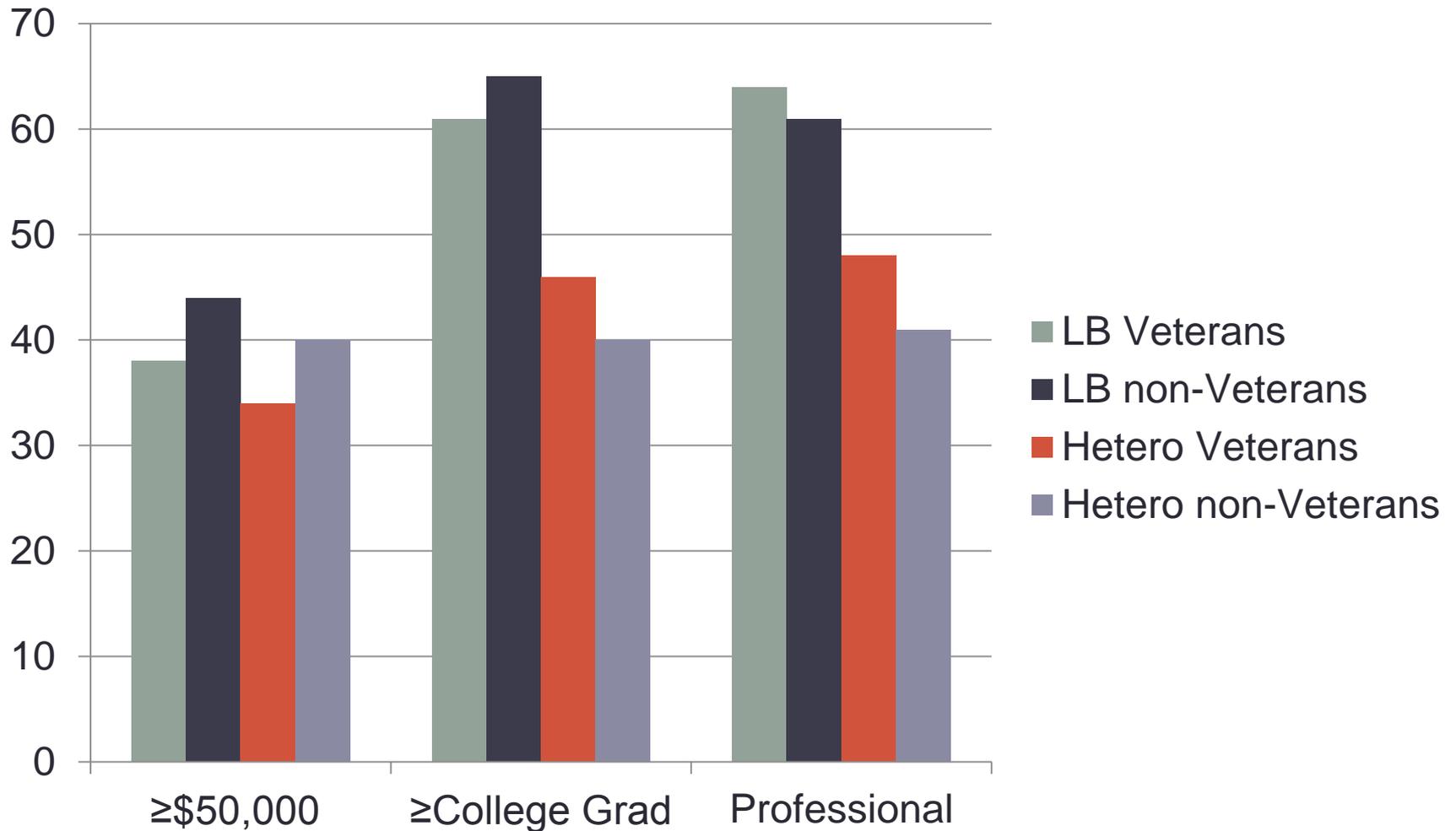
# WHI Method

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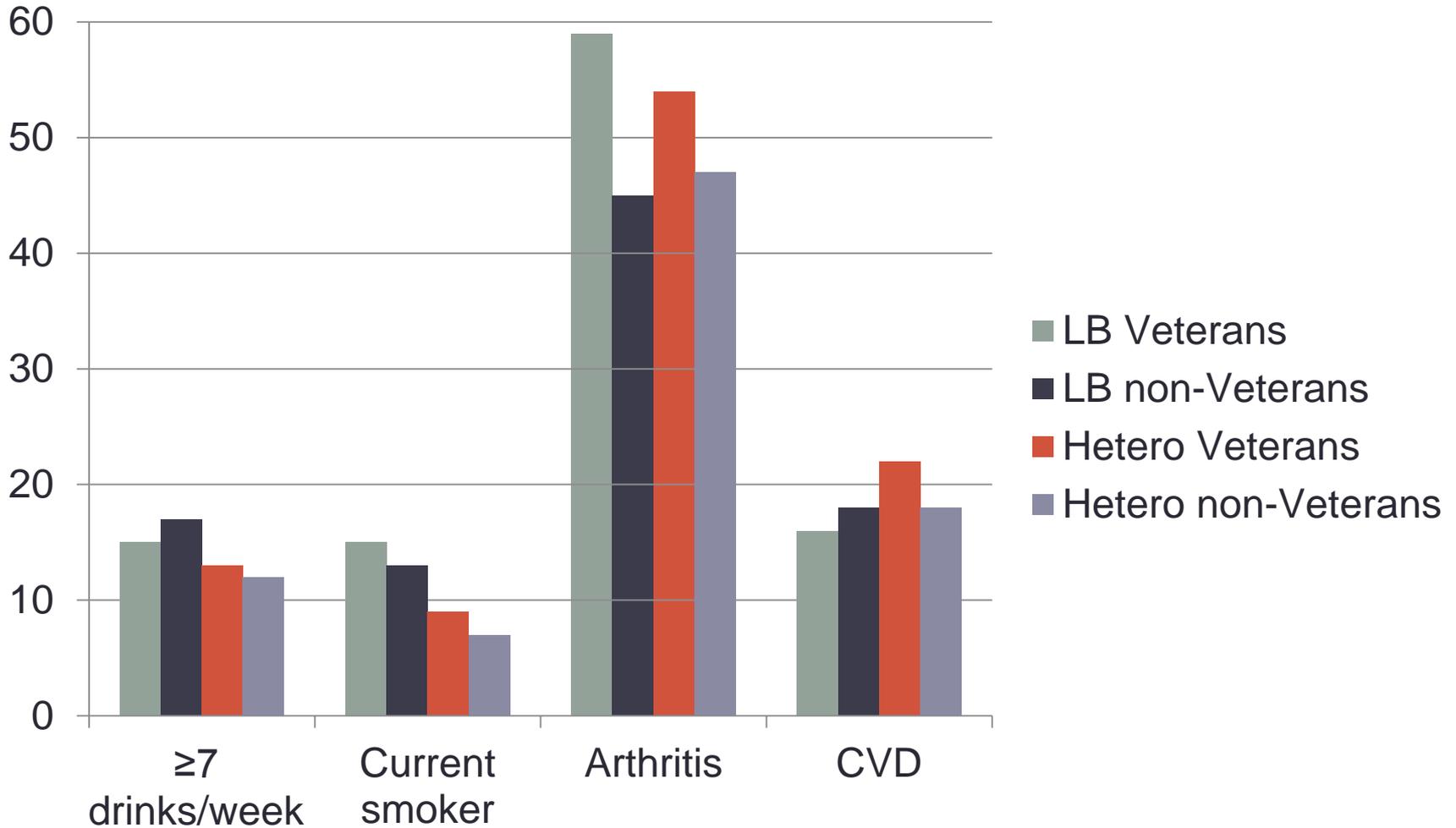
- Participants were women from either the observational study or clinical trials who had baseline data on Veteran status and sexual orientation (N = 137,639)
- **Sexual orientation** assessed by lifetime sexual behavior
- **Mortality** data via National Death Index through 2014
- **Covariates** included demographic, psychosocial, and health factors from baseline



# Demographic Differences



# Health Behaviors/Status



# Adjusted All-Cause Mortality

	HR	95% CI
<b>LB Orientation</b>	<b>1.20</b>	<b>1.07-1.36</b>
<b>Veteran status</b>	<b>1.14</b>	<b>1.06-1.22</b>
LB x Veteran	1.03	0.73-1.47

**LB women (vs. heterosexual women) and Veteran women (vs. non-Veteran women) higher all-cause mortality**

# Adjusted Cancer-Specific Mortality

	HR	95% CI
<b>LB Orientation</b>	<b>1.25</b>	<b>1.03-1.51</b>
Veteran status	1.01	0.89-1.16
<b>LB x Veteran</b>	<b>1.70</b>	<b>1.01-2.85</b>

**Significant interaction, indicating that the association between LB-status and cancer mortality varies by Veteran status**

# Stratified Models for Cancer Mortality

Group Comparison	HR	95% CI
<b>LB vs. hetero among Veterans</b>	<b>2.09</b>	<b>1.26-3.47</b>
<b>LB vs. hetero among non-Veterans</b>	<b>1.25</b>	<b>1.03-1.51</b>
Veterans vs. non-Veterans among hetero	1.01	0.89-1.16
Veterans vs. non-Veterans among LB	1.61	0.96-2.73

**LB Veterans more likely than hetero Veterans and  
LB non-Veterans more likely than hetero non-Veterans,  
but *association is stronger for the former***

# Clinical Implications

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- Strongest correlates of all-cause mortality across groups were smoking history and cardiovascular disease
- Need to focus on management of chronic disease and health behaviors

# Research Implications

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- Higher **all-cause mortality** among LB women relative to heterosexual women (and among Veterans relative to non-Veterans)
  - No interaction effects
- Despite protective factors for premature death, such as higher income, education, and professional occupation!
- Other factors may need to be considered
  - Stigma, poorer quality of care, nulliparity

# Enjoy all the articles on Women Veterans in the WHI

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[http://gerontologist.oxfordjournals.org/content/56/Suppl\\_1.toc](http://gerontologist.oxfordjournals.org/content/56/Suppl_1.toc)  
<http://gerontologist.oxfordjournals.org/content/56/1/115.full.pdf+html>

## Cyber Seminar 1

Reiber G, LaCroix A. Overview

LaCroix A et-al. Using the Women's Health Initiative to  
Answer Key Questions

Weitlauf J, et-al. Who are the Women Veterans?

Bastian L, et-al. Research Results

# Cyber Seminars 2, 3

## Healthy Aging – Session 2

Lacroix A, et-al. Aging Well Among Women Veterans Compared to Non-Veterans in the Women's Health Initiative

Washington D, et-al. Trajectories in Physical Activity and Sedentary Behavior among Women Veterans in the Women's Health Initiative

Padula C, Weitlauf J, et-al. Longitudinal Cognitive Trajectories of Women Veterans from the Women's Health Initiative Memory Study

## Diseases and Conditions – Session 3

Gray K, et-al. Association between chronic conditions and physical function among Veteran and non-Veteran women with diabetes

LaFleur J, et-al. Fracture rates and bone density among postmenopausal Veteran and non-Veteran women from the Women's Health Initiative

Patel K , et-al. Association of Pain with Functional Outcomes, Fatigue, and Sleep Quality among Veterans and non-Veterans: Findings from the WHI

Bastian L, et-al. Differences in Active and Passive Smoking Exposures and Lung Cancer Incidence between Veterans and non-Veterans in the WHI

# Cyber Seminars 4, 5

## Menopause Related Findings – Session 4

Katon J, et-al. Vasomotor Symptoms and Quality of Life Among Veteran and Non-Veteran Postmenopausal Women

Rissling M, et-al. Sleep Disturbance, Diabetes and Cardiovascular Disease in Postmenopausal Women Veterans

Callegari L, et-al. Hysterectomy and bilateral salpingo-oophorectomy: variations by history of military service and birth cohort

## Mortality Findings – Session 5

Washington D, et-al. Military generation and its Relationship to Mortality in Women Veterans in the Women's Health Initiative

Simpson T, et-al. All-cause Mortality and Alcohol Consumption among Women Veterans and non-Veterans Enrolled in the Women's Health Initiative

Lehavot K, et-al. Mortality in Postmenopausal Women by Sexual Orientation and Veteran Status



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# Questions?

