



Social Determinants of Suicide Risk among Women Veterans

A Brief Overview of the Current State of Research, Emerging Findings, and Future Endeavors

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Social Determinants of Health



World Health Organization definition:

"...non-medical factors that influence health outcomes. They are the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life. These forces systems include economic policies systems, development and agendas, social norms, social policies and political systems."



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Gender is a Core Social Determinant of Health (SDH)

- Gender is:
 - A social, rather than biological, construct
 - A construct which varies over time and across populations and cultures
 - A condition in which people are born, grow, work, live, and age
 - Shaped by social norms, social policies and political systems
- Gender intersects with and impacts all SDH domains, though degree of impact can also vary over time, populations, cultures (Phillips 2005)
 - "At a population level, in most countries of the world, women have more limited access to, and less control over, resources, and over their bodies and lives, than do men."
 - For example: education, income, social roles...
 - Gender-based discrimination and violence
 - Structural gender inequality
- The military is a system that shapes the conditions of daily life
 - Women are a minority group within this system
 - Gender is recognized to impact health outcomes in the Veteran population, including suicide and non-fatal suicidal self-directed violence
- The gender (sex) paradox in suicide (Canetto 1998)
 - Females have higher rates of suicidal ideation and behavior but lower rates of suicide in most Western countries

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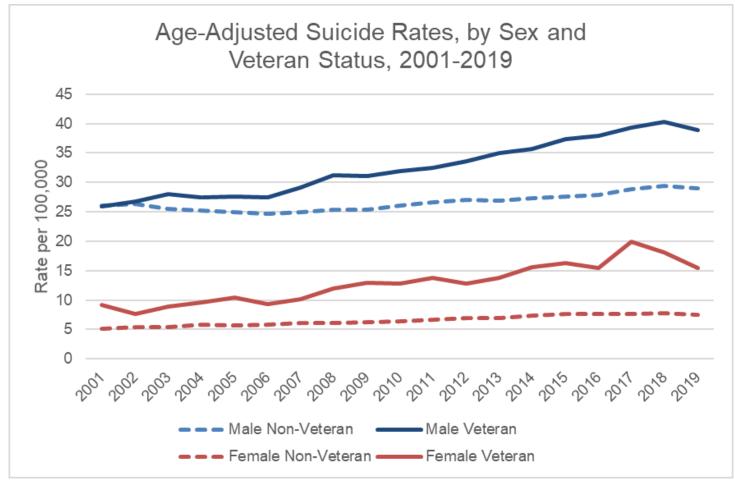
Gender (Sex) as a Social Determinant of Suicide among Veterans Rates and Trends



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Veteran Suicide Rates by Sex

- 2019 suicide rate among female Veterans was 2.1 times greater than for female non-Veterans
- 2001-2019, suicide rates for female Veterans increased 68.7% vs. 49.7% among male Veterans
- From 2017-2019, female Veterans experienced a notable decline (by 22.7%)

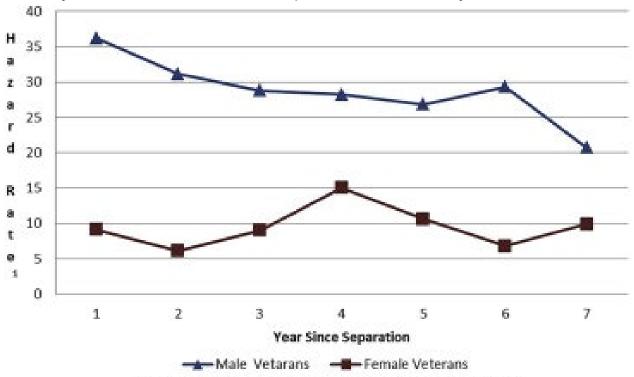




Veteran Suicide Rates by Sex and Time since Separation

- Separation from military service can present a variety of challenges that may elevate suicide risk for some Veterans and contribute to higher overall suicide rates among <u>younger</u> Veterans
 - SDoH particularly relevant during transition and reintegration and may differentially effect women
- In one study, risk for suicide after separation decreased more predictably for men than women (Bullman 2015)

Risk of Suicide by Number of Years Since Separation from Military Services: OEF and/or OIF Veterans



³Hazard rate is per 100,000 alive at beginning of interval.

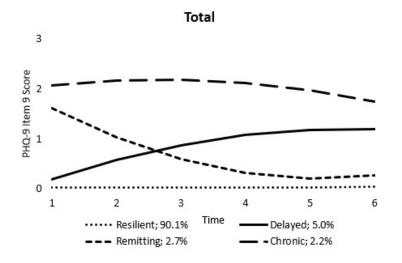




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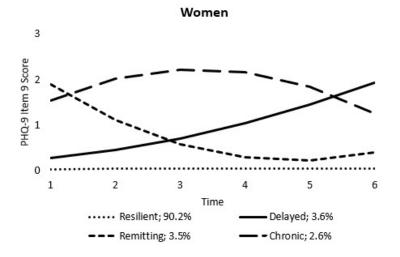
Trajectories of SI Severity Following Military Separation

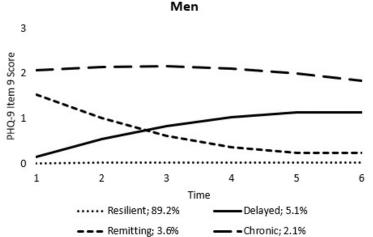
The Veteran Metrics Initiative Study (TVMI) of post-9/11 Veterans (Hoffmire 2022)



(based on most likely class membership)						
	All	Men	Women			
Resilient	8610	6970	1572			
Delayed	473	401	63			
Remitting	262	278	61			
Chronic	207	161	46			
Total	9552	7810	1742			

Sample Sizes in Each Class



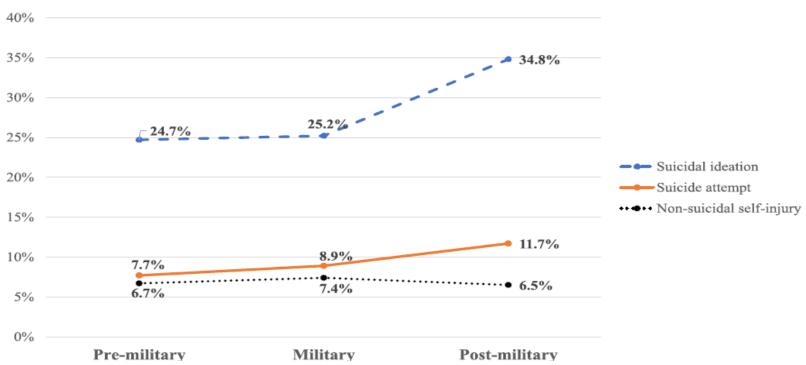






Prevalence of Suicidal Ideation (SI), Suicide Attempt (SA), and NSSI Relative to Military Service among Women Veterans

- High lifetime rates of SI (47.9%), SA (17.7%), and NSSI (13.2%) (Monteith 2020)
- Controlling for time at risk, women Veterans were more likely to report experiencing:
 - SI following separation (vs preceding or during military service)
 - SA following separation (vs relative to preceding military service)
- No significant differences in NSSI







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Onset of SI, SA, and NSSI Relative to Military Service in Women Veterans

- However, onset was most common pre-military (Monteith 2020)
- Adjusting for time at risk, odds of onset were higher:
 - Pre- (vs during) military service for SI
 - Pre-military (vs post-separation) for SI, SA, and NSSI
 - During military service (vs post-separation) for SA

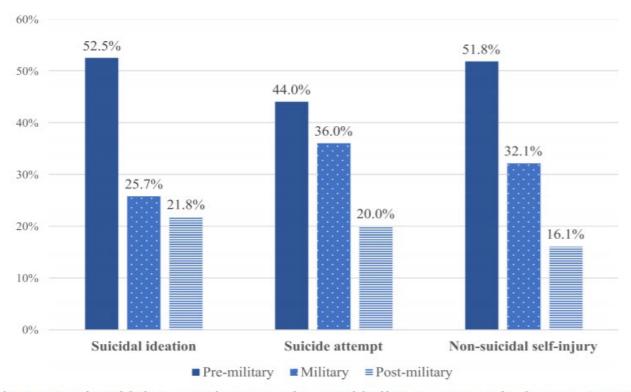


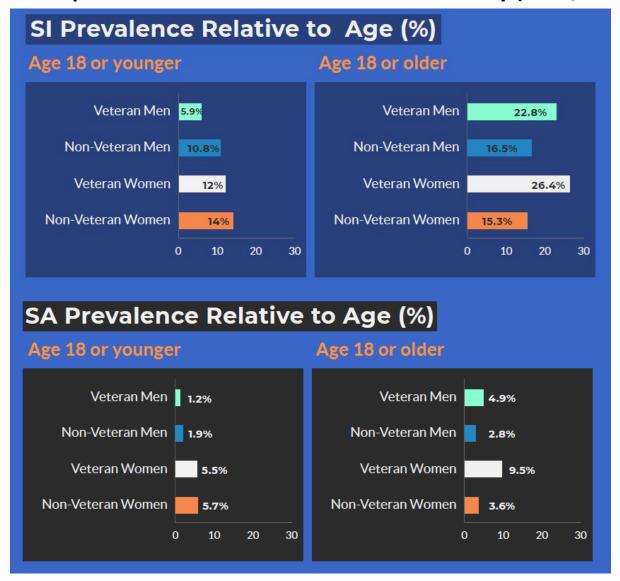
Fig. 3. Timing of suicidal ideation, suicide attempt, and non-suicidal self-injury onset among female veterans (Aim 2a).





Prevalence of SI and SA among Veterans compared to non-Veterans, by Gender

The Comparative Health Assessment Interview Study (CHAI; Hoffmire 2021a)



- Women Veterans
 reported higher
 prevalence of SI and SA
 across the life course
 <u>compared to men</u>
 Veterans
- Women Veterans
 experience higher
 prevalence of SI and SA in
 adulthood compared to
 non-Veteran women, but
 not in
 childhood/adolescence
- Women Veterans had increased odds of experiencing SI and SA onset as adults relative to childhood/ adolescence, whereas non-Veteran women had reduced odds of onset as adults





In summary...

- Suicide rates among women Veterans have increased substantially since 2001, though a decrease has been noted recently (2017-2001); we do not yet know if this will be a sustained trend.
- The relationship between suicide rates and time since military separation appears to differ for men and women but considering overall rates when evaluating such trends may mask variable trajectories of risk over the reintegration period. Understanding drivers of high-risk trajectories is critical.
- Recent studies suggest SI and SA are common among women Veterans and often originate prior to military service but remain prevalent following separation.
- As SI and SA are risk factors for subsequent suicidal self-directed violence, a portion of women Veterans may already be at risk upon entering military service.
- Delineating specific factors, including SDH, driving suicide risk for women Veterans, overall and at specific times across the life course, is essential.





Social Determinants of Suicide Risk among Women Veterans:

What do we know so far?

... a little...



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Psychosocial Stressors

Survey of Experience of Returning Veterans (SERV; Hoffmire 2021b)

- Post-9/11, previously deployed Veterans (N=809)
- Cross-sectional analysis of baseline survey data

Prevalence Ratios for Recent Suicidal Ideation (past 3 months), by Sex

	Adjusted (Age, Race, Marital Status) Prevalence Ratios (PR)							
		Males (n=471	L)	Females (n=338)				
	PR	95% CI	P-Value	PR	95% CI	P-value		
Recent Psychosocial Stressor ¹								
Financial Concerns	1.45	(0.88, 2.38)	0.14	2.03	(1.11, 3.74)	0.02		
Housing Concerns	1.32	(0.76, 2.28)	0.32	2.62*	(1.31, 5.27)	<0.01		
Concerns about Violence	2.27	(0.85, 6.10)	0.10	2.10^{*}	(0.70, 6.29)	0.19		
Concerns about other Stressful Life Events	2.82	(1.73, 4.59)	<0.01	1.37	(0.71, 2.66)	0.35		

Abbreviations. PR: Prevalence Ratio, CI: Confidence Interval



¹Participants were asked whether they had been concerned about finances, housing, violence, and other stressful life events over the past three months

^{*}Log Binomial failed to converge, Poisson Regression with robust standard errors was fit to estimate PR and 95% CI.





Justice Involvement

- Female justice-involved Veterans were <u>three times</u> more likely to report a lifetime SA compared to female Veterans without a history of justice involvement
- Justice involvement was not significantly associated with recent SI severity among females

Examining Associations...Justice-Involved PTSD Depression Suicidal Ideation (SI) Suicide Attempt (SA)

BACKGROUND

/eteran research largely limited to:



- Males
- Users of Veterans Health Administration (VHA) services

RESULTS & CONCLUSIONS

Study found that Post 9/11 Veterans ...

have more severe symptoms of PTSD & depression & are more likely to report lifetime SA & recent SI



a significant association between 48 & SA for



& current probation & parole significantly associated with depression symptoms, SI & SA

CURRENT STUDY METHODS

Secondary analysis of data from 812 post-9/11

Veterans



male & female

Eligible & not eligible for VHA care

Administered

PTSD Checklist

Patient Health Questionnaire-8

Columbia Suicide Severity Rating Scale

+ other relevant



Veterans appear to be:

- a vulnerable population
- w/heightened psychiatric symptoms
- increased risk for recent SI & lifetime SA

Connecting justice-involved Veterans to evidence-based mental health care is vital for both VHA & community services

Psychological Trauma: Theory, Research, Practice and Policy



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Homelessness/Housing Instability

- Lifetime homelessness has been associated with SI and SA among post-9/11 women Veterans
- Women Veterans with histories of homelessness and criminal justice involvement more likely to report experiencing lifetime SA.

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Association of lifetime homelessness and justice involvement with psychiatric symptoms, suicidal ideation, and suicide attempt among post-9/11 veterans



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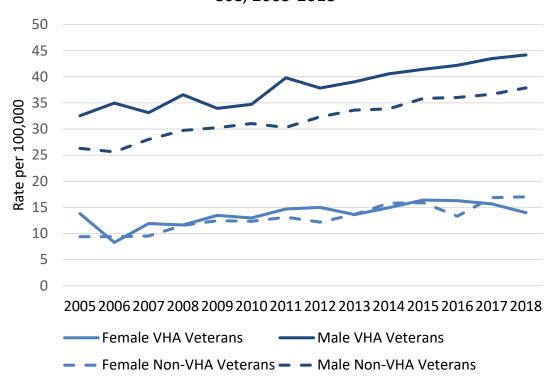
^d VA Health Outcomes of Military Exposures Epidemiology Program, United States



Healthcare Access

Most (~70%) Veterans do <u>not</u> use VHA

Age-Adjusted Veteran Suicide Rates, by Sex and VHA Use, 2005-2018



2020 VA National Veteran Suicide Prevention Annual Report.





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Healthcare Access and Quality

- Women experience unique barriers, many of which are related to social determinants of health, to accessing health care (VA 2015; Klap 2019; Marshall 2021):
 - Perceived harassment at VHA healthcare centers
 - 25% report inappropriate/unwanted comments from male Veterans on VA grounds (2015)
 - More likely to delay or miss care
 - Childcare
 - Rurality and driving distance not unique to women, but potentially compounded by other barriers
 - Stigma, Veteran identity, awareness of eligibility for care
- Until recently the was not a focus on providing gender-sensitive and specific care
 - Limited availability of VHA providers trained in women's health and gender-specific care services
 - <u>Significant</u> expansion on VA Women's Health Services in recent years, including those specific to mental health and suicide, but training, awareness and trust take time to build
- A History of Military Sexual Trauma (MST) and prior VHA use (never or past vs. current) have been shown to be associated with lower willingness to use VHA care If an suicidal or experiencing MH symptoms (Monteith 2021)



Interpersonal Violence and Harassment

Can be considered social determinants of health within the social and community context domain

- Especially pertinent for women Veterans: Military Sexual Trauma
- Well established risk factors for suicide and suicidal self-directed violence
- Intersect with other SDH across all domains







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Knowledge Gaps

Despite the increasing need to understand and prevent suicidal selfdirected violence among women Veterans...

- Such research has historically been limited
- Focused on those using VHA services
- Paucity of research on factors which may exacerbate or mitigate transition stress among women Veterans
- Sparse research aimed at understanding social determinants of suicide risk
- Limited research on women Veterans' preferences and experiences, including how best to address social determinants of suicide risk in this population



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Social Determinants of Suicide Risk among Women Veterans: Emerging/Preliminary Findings



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Well-Being

Encompasses individual's health (physical and mental), vocational, financial, and social circumstances

- Latter three domains can be considered aspects of psychosocial well-being
- Aligns with SDH in that many social determinant domains (e.g., economic stability, education access and quality, social and community context) contribute to psychosocial well-being
- Distinct in that psychosocial well-being concepts include a focus on functioning and satisfaction, in addition to status whereas SDH typically focus on status
 - Example: financial well-being vs. income
- Well-Being Inventory (Vogt, 2019)
 - Multidimensional assessment tool designed to measure military Veterans' status, functioning and satisfaction within the four life domains of health, vocation (work + education), finances, and social relationships (intimate, community, parenting)
 - https://www.ptsd.va.gov/professional/assessment/adult-sr/wbi.asp#obtain





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Psychosocial Well-Being and SI among Women Veterans

The Veteran Metrics Initiative Study (TVMI)

Post-9/11 men and women Veterans (N=1,739 women)

Well-Being at Transition Predicts SI Trajectory Class Membership for Women Veterans in the First Three Years Following Separation from Active-Duty Service

		Overall Well-Being			Vocational Well-Being		Financial Well-Being		Social (intimate, community) Well-Being	
		OR	95% C.I.	OR	95% C.I.	OR	95% C.I.	OR	95% C.I.	
Crude Dela	yed	0.40*	0.30, 0.54	0.74*	0.61, 0.90	0.52*	0.39, 0.69	0.63*	0.49, 0.81	
Rem	itting	0.32*	0.20, 0.50	0.69*	0.55, 0.86	0.53*	0.40, 0.70	0.44*	0.31, 0.62	
Chro	onic	0.30*	0.18, 0.50	0.62*	0.48, 0.79	0.47*	0.32, 0.67	0.54*	0.38, 0.76	
Adjusted										
Delaye	ed	0.46*	0.33, 0.64	0.78*	0.63, 0.97	0.54*	0.40, 0.72	0.56*	0.43, 0.81	
Remit	ting	0.42*	0.25, 0.72	0.74*	0.58, 0.93	0.63*	0.45, 0.88	0.45*	0.31, 0.66	
Chron	ic	0.33*	0.16, 0.67	0.68*	0.53, 0.87	0.57*	0.37, 0.89	0.67*	0.49, 0.91	

Notes. Multinomial Logistic Regression models were fit. Odds Ratios (OR) with 95% Confidence Intervals (95% C.I.) represent the change in odds of assignment to each comparison class relative to the reference class (resilient) per unit increase in each predictor. Well-being was measured with the Well-Being Inventory (WBI) Adjusted models included demographic and military characteristics. Demographic covariates included: age (younger than 35; 35 or older) and race/ethnicity (White, non-Hispanic; Black, non-Hispanic; Other race/ethnicity). Military characteristic covariates included: type of military separation (Honorable/generable under honorable conditions; still serving in National Guard/Reserves; Other (e.g., Medical, Under other than honorable conditions), rank (enlisted personnel; warrant officer/officer), and Veteran Health Administration (VHA) use (use of VHA hospital or clinic in past 3 months; no use in past 3 months). *p <.05

Preliminary, unpublished findings from VA HSR&D: HX003138-01 (PI: Vogt)





Psychosocial Well-Being and SI among Women Veterans

Novel Opportunities for Suicide Prevention in Reproductive Healthcare (RHC) Settings

Post-9/11 Women Veterans using VHA RHC

Prevalence Ratios for Current (Past Month) Suicidal Ideation among Women Veterans using VHA Reproductive Health Care Services

		Crude		Adjusted: Demographics + Military Service*			Adjusted: Demo, Mil + Mental Health**		
Parenting Domain	PR	95% CI	p-value	PR	95% CI	p-value	PR	95% CI	p-value
Responsibilities (Status)									
Yes (vs. No)	0.632	0.33,1.20	0.16	0.64	0.33,1.24	0.19	0.693	0.36,1.32	0.27
Functioning									
Low (vs. High)	1.848	0.55,6.25	0.32	1.937	0.55,6.82	0.30	0.989	0.22,4.12	0.99
Satisfaction									
Low (vs. High)	3.85	1.50,9.91	<0.01	4.23	1.68,10.62	<0.01	3.25	1.26,8.38	0.01

Poisson regression with robust standard errors was used to directly estimate prevalence ratios

Parental well-being measured with the Well-Being Inventory (WBI); Depression assessed with PHQ-8; PTSD assessed with PCL-5; problematic alcohol use assessed with AUDIT-C; problematic drug use assessed with DAST.



N = 352 survey respondents

^{*}Adjusted for age, employment status, years since separation

^{**}Adjusted for above + depression, PTSD, problematic alcohol use, problematic drug use

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Social Determinants of Suicide Risk among Women Veterans: Ongoing & Future Research



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Preventing Suicide Among Female and Male Veterans Not Receiving VHA Services

Mixed-methods study aiming to compare VHA using, lost-to-care, and never-VHA Veterans (living and suicide decedents), by gender, regarding:

- 1. Circumstances surrounding death
 - Many social determinants (problems and crises) can be assessed using linked
 VA and National Violent Death Reporting System (NVDRS) data:
 - Legal/justice involvement
 - Housing instability (homelessness, eviction)
 - Financial
 - Vocational (employment and education)
 - Interpersonal/Relationships
- 2. Willingness to seek help for mental health concerns, barriers to mental health care, and mental health care experiences
- 3. Experiences, preferences and barriers to seeking help when suicidal

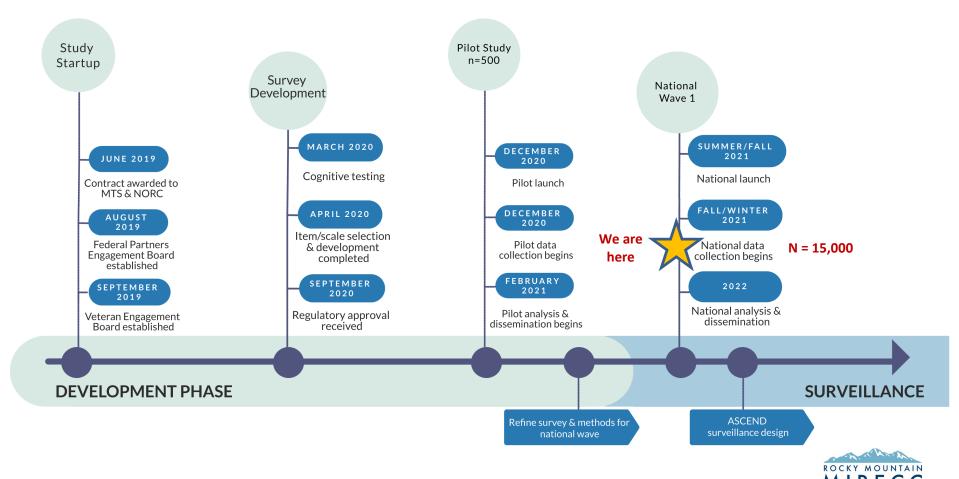




ASCEND for Veteran Suicide Prevention

ASCEND Study Timeline

Assessing Social & Community Environments with National Data



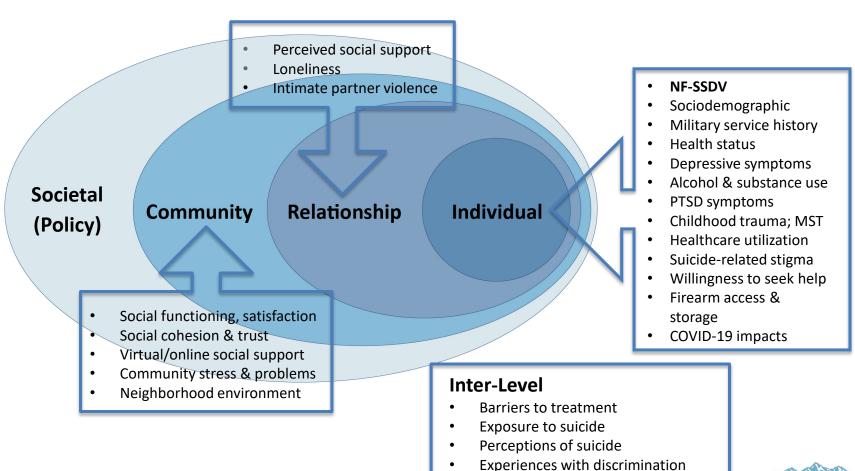
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Survey Domains

Social-Ecological Model guided organization of ASCEND survey domains

Societal will be captured primarily with supplemental data









Letter to the Editor

Understanding women's risk for suicide during the COVID-19 pandemic: A call to action

Lindsey L. Monteith a, b A M, Ryan Holliday a, b, Claire A. Hoffmire a, c

COVID-19 Pandemic as a social determinant for Women Veterans?



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COVID-19 Pandemic as a SDH for Women Veterans?

Preliminary findings from ASCEND and other ongoing ASPIRE Lab studies suggest that Veterans' experiences of the COVID-19 pandemic have included the following:

- Social isolation and relationships
- Psychosocial functioning (e.g., financial strain, employment)
- Mental health
- Firearm beliefs and behaviors
- VHA service use and access.

We will be examining if there are gender differences within these.





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https://www.mirecc.va.gov/visn19/aspire/









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