
Factors Associated with Homelessness Among US Veterans

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AUTHORS

Author roles, affiliations, and contributions to the present report (using the [CRediT taxonomy](#)) are summarized in the table below.

Author	Role and Affiliation	Report Contribution
Johanna K. Anderson, MPH	Senior Research Associate, Evidence Synthesis Program (ESP) Coordinating Center, Portland VA Health Care System Portland, OR	Conceptualization, Methodology, Investigation, Visualization, Writing – original draft, Supervision, Project administration
Katherine M. Mackey, MD, MPP	Associate Director & Clinician Investigator, ESP Coordinating Center, Portland VA Health Care System Portland, OR	Conceptualization, Writing – original draft, Writing – review & editing
Erin H. Beech, MA	Senior Research Associate, ESP Coordinating Center, Portland VA Health Care System Portland, OR	Conceptualization, Investigation, Methodology, Writing – review & editing
Sarah Young, MPH	Research Associate, ESP Coordinating Center, Portland VA Health Care System Portland, OR	Investigation, Project administration
Nicholas J. Parr, PhD, MPH	Associate Director & Research Scientist, ESP Coordinating Center, Portland VA Health Care System Portland, OR	Conceptualization, Writing – original draft, Writing – review & editing

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The findings and conclusions in this document are those of the author(s) who are responsible for its contents and do not necessarily represent the views of the Department of Veterans Affairs or the United States government. Therefore, no statement in this article should be construed as an official position of the Department of Veterans Affairs. No investigators have any affiliations or financial involvement (eg, employment, consultancies, honoraria, stock ownership or options, expert testimony, grants, or patents received or pending, or royalties) that conflict with material presented in the report.

PREFACE

The VA Evidence Synthesis Program (ESP) was established in 2007 to provide timely and accurate syntheses of targeted health care topics of importance to clinicians, managers, and policymakers as they work to improve the health and health care of Veterans. These reports help:

- Develop clinical policies informed by evidence;
- Implement effective services to improve patient outcomes and to support VA clinical practice guidelines and performance measures; and
- Set the direction for future research to address gaps in clinical knowledge.

The program comprises 4 ESP Centers across the US and a Coordinating Center located in Portland, Oregon. Center Directors are VA clinicians and recognized leaders in the field of evidence synthesis with close ties to the AHRQ Evidence-based Practice Center Program. The Coordinating Center was created to manage program operations, ensure methodological consistency and quality of products, interface with stakeholders, and address urgent evidence needs. To ensure responsiveness to the needs of decision-makers, the program is governed by a Steering Committee composed of health system leadership and researchers. The program solicits nominations for review topics several times a year via the [program website](#).

The present report was developed in response to a request from the VA Offices of Enterprise Integration (OEI) and Planning and Performance Management (OPPM), which has established an Integrated Project Team (IPT) on Homelessness. The scope was further developed with input from Operational Partners (below) and the ESP Coordinating Center review team.

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Operational Partners

Operational partners are system-level stakeholders who help ensure relevance of the review topic to the VA, contribute to the development of and approve final project scope and timeframe for completion, provide feedback on the draft report, and provide consultation on strategies for dissemination of the report to the field and relevant groups.

Dave Zlowe

VA Evidence Lead

Office of Enterprise Integration

Peer Reviewers

The Coordinating Center sought input from external peer reviewers to review the draft report and provide feedback on the objectives, scope, methods used, perception of bias, and omitted evidence (see Appendix D in Supplemental Materials for disposition of comments). Peer reviewers must disclose any relevant financial or non-financial conflicts of interest. Because of

their unique clinical or content expertise, individuals with potential conflicts may be retained. The Coordinating Center works to balance, manage, or mitigate any potential nonfinancial conflicts of interest identified.

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EVIDENCE REPORT

INTRODUCTION

PURPOSE

The Evidence Synthesis Program (ESP) Coordinating Center is responding to a request from the VA Offices of Enterprise Integration (OEI) and Planning and Performance Management (OPPM), which have established an Integrated Project Team (IPT) on Homelessness. The IPT has requested a review of known risk factors for homelessness experienced by US Veterans during the pre-service, in-service, and post-service periods. Findings from this review will inform cross-VA efforts to better understand and address homelessness among Veterans.

BACKGROUND

According to the US Department of Housing and Urban Development's (HUD) national Point-in-Time (PIT) counts, more than 33,000 US Veterans experienced homelessness on a single night in 2022.³⁴ Circumstances leading to homelessness are often complex because they can involve both community-level factors, such as local housing policies and market conditions, and factors at the individual level, such as having a mental health or substance use disorder.³⁵ A social-ecological framework for understanding homelessness underscores that individual-level factors alone do not predict homelessness; rather, these factors characterize individuals who may be more vulnerable to broader societal and economic forces that create conditions of homelessness.^{35,36} Veterans may have unique individual-level vulnerabilities to homelessness, including those stemming from a history of combat exposure or experiences of military sexual trauma.³⁷ They may also have unique protective factors, such as access to health care (including mental health care) and case management supports.

Although estimates of homelessness among Veterans have been declining since 2009 (the first year these data were reported), homelessness remains more common among Veterans compared to non-Veterans.^{38,39} In general, individuals experiencing homelessness have higher rates of premature mortality compared to the housed population.⁴⁰ Veterans experiencing homelessness are more likely than other Veterans to utilize VA emergency departments⁴¹ and may be less likely to receive preventive care.⁴² Improved understanding of the community and individual-level factors that increase Veterans' risk of homelessness, as well as factors that may be protective, is needed for VA programs and policies to progress toward ending Veteran homelessness. The aim of this systematic review is to synthesize evidence on factors associated with homelessness among Veterans to inform ongoing VA efforts to reduce and prevent Veteran homelessness and identify areas for future research.

METHODS

PROTOCOL

A preregistered protocol for this review can be found on the PROSPERO international prospective register of systematic reviews ([CRD42023418367](https://doi.org/10.1111/CRD4.2023418367)).

KEY QUESTIONS

The following key questions below were the focus of this review:

Key Question 1	Among Veterans and other adults, what factors during childhood and adolescence are associated with homelessness during adulthood?
Key Question 2	Among Veterans, what factors during in-service and post-service periods are associated with post-service homelessness?

ELIGIBILITY CRITERIA

Study eligibility criteria are shown in the table below. Given that early-life experiences may impact later risk for experiencing homelessness regardless of military service, studies addressing Key Question 1 (KQ1) could include Veterans or adults in the general population. Studies in the general (*ie*, non-Veteran) population were included only when they were synthesized in 1 or more existing systematic reviews. Relevant reviews were required to meet predefined methodological criteria to be included (see below for further detail). Key Question 2 (KQ2) was limited to studies conducted among Veterans.

Population	KQ1: US Veterans (any service era) and other adults experiencing homelessness KQ2: US Veterans (any service era) experiencing homelessness
Exposures	Factors examined for associations with homelessness, including at the population and individual levels. Studies focused on interventions for homelessness will be ineligible.
Outcomes	Homelessness (defined as meeting US Department of Housing and Urban Development criteria, use of any specialized VA homeless services, or documented ICD-9/10 clinical code suggesting homelessness)
Study Design	Comparative and noncomparative studies (<i>eg</i> , cohort studies, case-control studies, cross-sectional survey studies)

DATA SOURCES AND SEARCHES

To identify articles relevant to the key questions, a research librarian searched Ovid MEDLINE, PsycInfo, and SocIndex, as well as AHRQ, the Cochrane Database of Systematic Reviews, and HSR&D through March 2023 using terms for *homelessness* and *Veterans* (see Appendix A in Supplemental Materials for complete search strategies). Additional citations were identified from hand-searching reference lists and consultation with content experts. We limited the search to published and indexed articles involving human subjects available in the English language. We did not limit the search by date. Study selection was based on the eligibility criteria described above. Studies examining interventions for homelessness were excluded. Titles, abstracts, and

full-text articles were independently reviewed by 2 investigators. All disagreements were resolved by consensus or discussion with a third reviewer.

DATA ABSTRACTION AND ASSESSMENT

Effect information and population and exposure characteristics were abstracted from all included studies. The internal validity (risk of bias) was rated using the Cochrane Risk of Bias Tool for Systematic Reviews⁴³ and the Quality in Prognosis Studies (QUIPS)⁴⁴ tool for primary studies. All data abstraction and internal validity ratings were first completed by 1 reviewer and then checked by another; disagreements were resolved by consensus or discussion with a third reviewer.

We graded the strength of the evidence for each exposure examined in longitudinal studies based on the AHRQ Methods Guide for Comparative Effectiveness Reviews.⁴⁵ This approach provides a rating of confidence in reported findings based on study methodology (design and risk of bias), consistency (whether effects are in the same direction and have a consistent magnitude), precision (*eg*, confidence intervals), and directness (whether assessed outcomes are clinically important to patients and providers). For this review, we applied the following general algorithm: *high strength* evidence consisted of multiple, large studies with low risk of bias, consistent and precise findings, and clinically relevant outcomes; *moderate strength* evidence consisted of multiple studies with low to unclear risk of bias, consistent and precise findings, and clinically relevant outcomes; *low strength* evidence consisted of a single study, or multiple small studies, with unclear to high risk of bias, inconsistent or imprecise findings, and/or outcomes with limited clinical relevance; and *insufficient* evidence consisted of a single study with an unclear or high risk of bias or no available studies.

SYNTHESIS

We employed a best-evidence approach to guide the final synthesis. We prioritized studies that measured potential risk or protective factors before homelessness occurred (*eg*, substance misuse occurring prior to homelessness), or examined factors that clearly preceded homelessness (*eg*, military discharge status among Veterans experiencing homelessness). Practically, this approach meant that we prioritized longitudinal studies over cross-sectional studies, though we highlighted findings from cross-sectional studies when at least 2 studies examined a factor that was not included in cohort studies. We did not rate the internal validity of cross-sectional studies or consider them in strength of evidence assessments.

Findings were organized by timeframe (pre-service, during service, post-service, and across timeframes) and synthesized narratively. We classified military discharge status and disability ratings as “during service” factors because they reflect Veterans’ military service experiences. Although mental health, substance use, and general medical conditions may span timeframes and precede or be exacerbated by military service, data on these factors were measured after military service and we classified them as “post-service.”

For each potential individual-level factor, we considered whether that factor had a strong or moderate association with homelessness based on the magnitude of the reported risk ratio, odds ratio, and/or hazard ratio. Strong factors were those with ratios generally above 2.5 and moderate factors had risk estimates ranging from 1.5 to 2.5. We designated factors with estimates that were generally below 1.5 or had nonsignificant or mixed findings as uncertain. The inverse of ratios

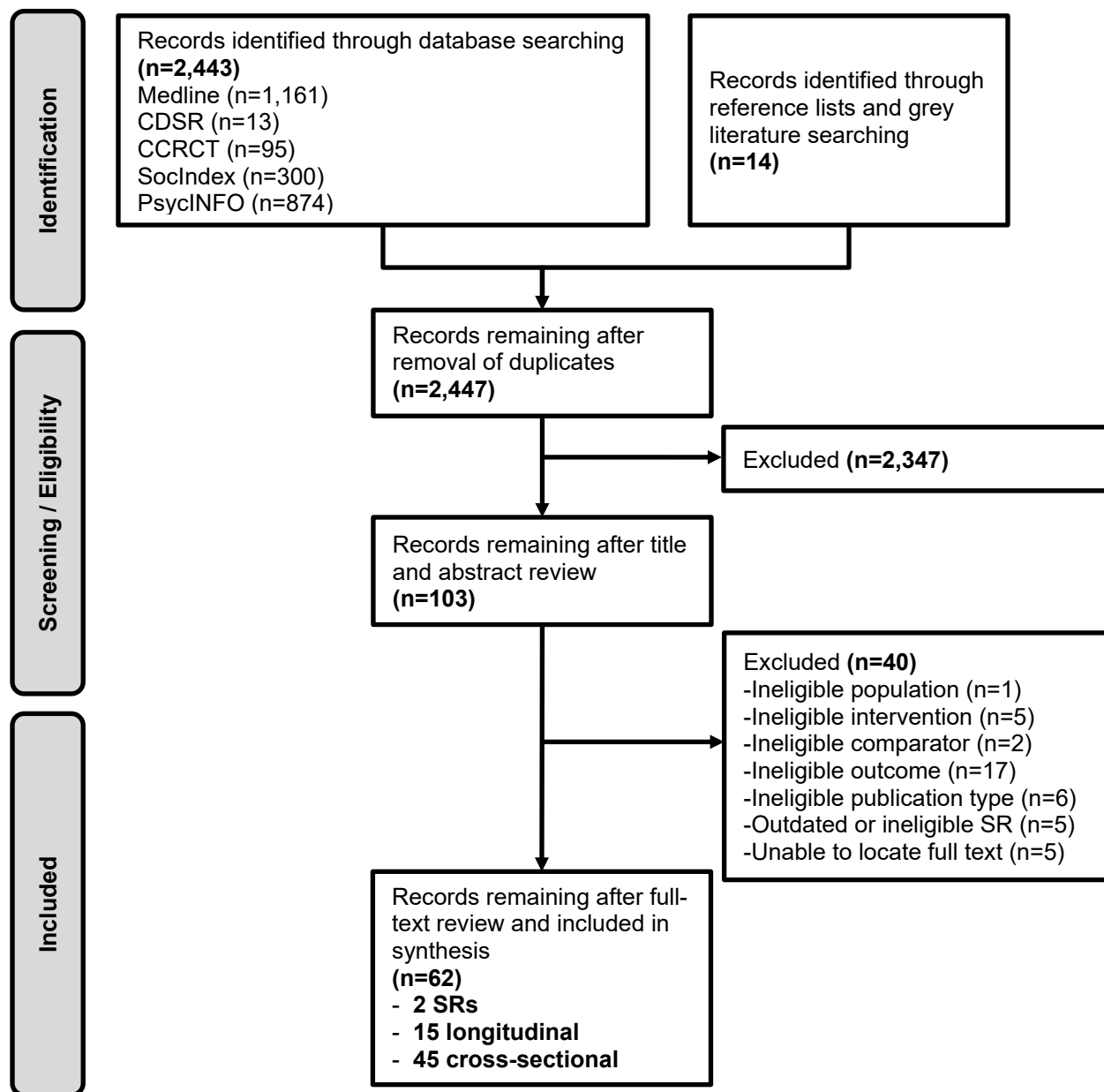
less than 1 was calculated to determine whether strong or moderate ratings were applicable. Some cross-sectional studies reported correlations or tested differences in continuous outcomes, and we prioritized studies reporting ratios to determine moderate or strong associations if available.

RESULTS

LITERATURE FLOW

The literature flow diagram (Figure 1) summarizes the results of the study selection process (a full list of excluded studies is available in Appendix B in Supplemental Materials).

Figure 1. Literature Flowchart



Abbreviations. CCRCT=Cochrane Central Register of Controlled Trials; CDSR=Cochrane Database of Systematic Reviews; SR=systematic review.

LITERATURE OVERVIEW

We identified 103 potentially relevant articles after deduplication and title and abstract screening. We included 62 studies (in 64 publications), 2 systematic reviews on childhood and adolescent risk factors for homelessness in the general population,^{46,47} and 15 longitudinal cohorts^{1-4,6-16} (Table 1) and 43 cross-sectional studies (in 45 publications)^{18-33,39,48-75} in Veteran populations (see Appendix C in Supplemental Materials for full study details). Most longitudinal studies were retrospective cohorts utilizing large samples (sample size range 620 to 4,633,069) pulled from VHA databases. Most of these studies included a general Veteran population utilizing VHA services, but several studies were specific to Veterans serving in Operation Enduring Freedom (OEF), Operation Iraqi Freedom (OIF), and Operation New Dawn (OND), and 1 study¹⁰ from 1994 focused on male Vietnam Veterans.

Studies evaluated individual-level factors associated with homelessness. We did not identify any studies of structural factors examined at the community level. Most exposures occurred during service (*eg*, combat exposure, military sexual trauma) or post-service (*eg*, mental health, substance use). Many studies also examined disparities in experiencing homelessness based on demographic factors that spanned timeframes (*eg*, gender and race/ethnicity).

Definitions of homelessness varied across studies, reflecting the lack of a universally accepted definition or method of measuring homelessness. HUD's definition of homeless describes a person who lacks a fixed, regular, and adequate nighttime residence.³⁴ The VA uses the McKinney-Vento definition of homelessness which includes those living in temporary shelters.^{76,77} In included studies, homelessness was most often measured by International Classification of Diseases (ICD)-9/10 codes (8/15 longitudinal studies), use of VA homelessness services, and/or a positive response to the VA Homelessness Screening Clinical Reminder (HCSR). The VA HCSR asks 2 questions: "In the past 2 months, have you been living in stable housing that you own, rent, or stay in as part of a household?" and "Are you worried or concerned that in the next 2 months you may NOT have stable housing that you own, rent, or stay in as part of a household?" Most studies relied on a positive response to the first question regarding stable housing, but several studies looked at the combined response to the 2 screening questions, which represents both homelessness and housing insecurity.

Factors that were examined in more than 1 cross-sectional study but not included in longitudinal studies were transgender identity,²⁶⁻²⁸ education level,¹⁸⁻²⁴ Asian race,^{29,63} geographic location,^{21,29,33,52} obesity,^{29,69} dementia,^{32,55} unemployment,²³⁻²⁵ years of military service,^{18,19,22} enlistment (not commissioned or drafted),^{19,22} deployment frequency,^{18,19} inpatient substance abuse treatment,^{29,30} tobacco use,^{19,24,31,32} lifetime trauma history,^{19,33} and use of inpatient, outpatient, or emergency department care.^{24,29,30,52} The remaining cross-sectional studies either examined factors that were included in longitudinal studies or examined a factor unique to that study (see Supplemental Materials for full study details).

Although most studies used statistical adjustment methods to control for demographic characteristics and health conditions (*ie*, age, race, mental health disorders), most did not adjust for a comprehensive set of potential confounding variables and remain at risk of bias. Another common methodological limitation of cohort studies was the exclusion of potential study participants because of missing data. Strength of evidence ratings were mostly low or insufficient due to study limitations, inconsistent findings, and/or identifying only a single cohort study for a

given factor. However, several factors were rated as having moderate strength of evidence including alcohol use disorder, drug use disorder (including opioid use disorder), posttraumatic stress disorder (PTSD), depression, schizophrenia or psychoses, misconduct or dishonorable discharge status, experience of military sexual trauma, non-married marital status, having a lower income or financial status, and living in a non-rural geographic area (see Supplemental Materials for full risk of bias and strength of evidence assessments).

Table 1. Characteristics of Included Longitudinal Studies

Study	Sample Size <i>Follow-up</i>	Specific Population(s) Examined	Population Characteristics	Homelessness Classification	Exposures/Factors Assessed
Brignone 2016 ³	N=601,892 60 mos.	OEF/OIF Veterans separated between 2001 and 2011	39.2 yrs. 87.6% male 50.2% White	ICD-9 code, or non-ICD VHA clinic or specialty code related to receipt of homeless services	Gender; Military sexual trauma; Education; Marital status; Race; Hispanic ethnicity; Military rank; Branch of service
Brignone 2018 ¹	N=19,794 12 mos.	Misconduct-discharged Veterans deployed to post-9/11 conflicts in Iraq and Afghanistan	26.8 yrs. 91.9% male 59.3% White	ICD-9 code, or non-ICD VHA clinic or specialty code related to receipt of homeless services	Gender; Marital status; No HS diploma; Race; Combat exposure; Disability rating; Military branch; Military sexual trauma; Pay grade; MH clinic usage; PTSD diagnosis; Substance use clinic usage
Byrne 2015 ⁴	N=17,720 6-12 mos.	Veterans responding to the HSCR at VHA healthcare facilities	NR	Positive screen on HSCR	Age; Gender; Hispanic/Latino ethnicity; Race; Disability rating; OEF/OIF service era
Elbogen 2013 ¹³	N=1,090 12 mos.	Iraq and Afghanistan War era Veterans	34.4 yrs. (median) 84.5% male 72.8% White	Study survey question	Mental health diagnoses; History of incarceration; Income (annual and money mismanagement)
Fargo 2017 ⁶	N=449,329 60 mos.	OEF/OIF Veterans discharged as of Dec. 2011	38.4 yrs. 89.7% male 38.4% White	ICD-9 codes and receipt of VHA homeless services	Disability rating; Discharge status; Mental health or substance use disorder
Ghose 2013 ¹²	N=28,383 12 mos.	HIV-infected and uninfected patients seen in VA infectious disease and general medical clinics	50.2 yrs. 94.9% male NR	Study survey question	Gender; Race; HIV status; Mental health diagnoses; Income; Hazardous alcohol use; Alcohol dependence; Weekly illicit substance use
Gundlapalli 2014 ¹⁶	N=31,260 24 mos.	OEF/OIF/OND Veterans	NR	ICD-9 code or receipt of VA homeless services	Alcohol/Substance use VA encounter
Gundlapalli 2015 ¹⁴	N=448,290 60 mos.	Veterans deployed in Afghanistan or Iraq	NR (62.3% 18-29 yrs.) 87.8% male 39.8% White	ICD-9 code or participation in VA homelessness services	Discharge status

Study	Sample Size Follow-up	Specific Population(s) Examined	Population Characteristics	Homelessness Classification	Exposures/Factors Assessed
Jutkowitz 2021 ⁷	N=383,478 NR	Veterans with a diagnosis of Alzheimer's disease or related diagnoses	78.5 yrs. 97.5% male 77.2% White	ICD-9 and ICD-10 codes	Age; Gender; Marital status; Race; Combat exposure; Disability rating; Medical conditions; Mental health diagnoses; Rural living area; Alcohol use disorder; Substance use disorder
Metraux 2013 ²	N=310,685 60 mos.	Veterans discharged between 2005-2006	NR 84.8% male NR	ICD-9 code or receipt of VA homeless services	Age; Discharge status; Military branch; Pay grade; Mental health diagnoses; Substance use
Montgomery 2020 ⁸	N=4,633,069 48 mos.	Veterans responding to the HSCR at VHA health care facilities	NR 92.8% male 76.9% White	Positive screen on HSCR	Age; Gender; Hispanic ethnicity; Marital status; Race; Combat exposure; Disability rating; Military sexual trauma; OEF/OIF/OND service era; Chronic medical condition; Mental health diagnoses; Suicide or self-harm; Rural living area; Alcohol use disorder; Drug use disorder; Opioid use disorder
Mulcahy 2021 ⁹	N=194,330 NR	Female Veterans responding to HSCR 3 or more times with initial housing stability	49.6 yrs. 100% female 61.1 White (non-Hispanic)	Positive screen on HSCR	Marital status; Combat exposure; Disability rating; Discharge status; Military sexual trauma; OEF/OIF/OND service era; Chronic medical condition; Mental health diagnoses; Suicide or self-harm; Alcohol use disorder; Drug use disorder
Naifeh 2022 ¹⁵	N=6,837 NR	Veterans responding to 2 Army STARRS surveys	NR 82.6% male 67.3% White (non-Hispanic)	STARRS survey question modified from HSCR	Discharge status
Rosenheck 1994 ¹⁰	N=1,523 NR	Male Vietnam War era Veterans	NR	Study survey question	Marital status; Minority/ethnic racial group; Combat exposure; Participation in atrocities; Mental health diagnoses; Adult non-military trauma; Substance abuse; ACEs

Study	Sample Size Follow-up	Specific Population(s) Examined	Population Characteristics	Homelessness Classification	Exposures/Factors Assessed
Tsai 2017 ¹¹	N=306,351 12 mos.	Veterans referred to specialty mental health clinics	NR (27% 56-65 yrs.) 93.7% male 60.3% White	ICD-9 code, participation in VA homelessness services, or specialty bed selection codes for homeless Veterans	Age; Marital status; Race; Major depression/dysthymia; Income; Alcohol use disorder; Drug use disorder

Abbreviations. ACEs=adverse childhood experiences; Dec.=December; HIV=human immunodeficiency virus; HS=high school; HSCR=homelessness screening clinical reminder; HUD-VASH=Housing and Urban Affairs Veterans Affairs Supportive Housing; ICD=International Classification of Diseases; MH=mental health; mos.=months; NR=not reported; OEF=Operation Enduring Freedom; OIF=Operation Iraqi Freedom; OND=Operation New Dawn; PTSD=posttraumatic stress disorder; SC=service connected; STARRS=Study to Assess Risk and Resilience in Servicemembers; TBI=traumatic brain injury; VA=Veterans Affairs; VHA=Veterans Health Affairs; yrs.=years.



PRE-SERVICE FACTORS ASSOCIATED WITH HOMELESSNESS

Childhood and Adolescent Factors Studied in the General Population

Adverse childhood experiences (ACEs), which are more common among economically disadvantaged and racial/ethnic minority populations, are associated with a range of negative health and social outcomes⁷⁸ and are frequently reported among adults experiencing homelessness (Table 2).^{46,47,79} One meta-analysis⁴⁶ found that nearly 90% of adults experiencing homelessness reported 1 or more ACEs and more than 50% reported 4 or more ACEs. Another meta-analysis⁴⁷ reported that adults who experienced childhood sexual, physical, or emotional abuse, family or parental problems, or foster care were more likely to experience homelessness than adults who did not experience those events in childhood.

Table 2. Adverse Childhood Experiences Associated with Homelessness

Review	Timeframe for Eligible Studies	# Included Studies ^a	ACE (# studies ^b)	Findings
Liu 2021 ⁴⁶	Through Nov. 2020 ^c	29 (Cross-sectional)	1 or more ACEs ^d (20)	Prevalence=89.8%, 95% CI [83.7, 93.7]
			4 or more ACEs ^d (15)	Prevalence=53.9%, 95% CI [45.0, 61.7]
Nilsson 2019 ⁴⁷	Through Jan. 2018 ^c	134 (Cross-sectional)	Sexual abuse (10)	OR=1.9, 95% CI [1.3, 2.8]
			Physical abuse (11)	OR=2.9, 95% CI [1.8, 4.4]
			Emotional abuse (3)	OR=2.4, 95% CI [1.6, 3.5]
			Family/parental problems (17)	OR=2.3, 95% CI [1.7, 3.0]
			Foster care/change of carer (13)	OR=3.7, 95% CI [1.9, 7.3]

Notes. ^a Total number of included studies in the review. ^b Number of studies included in meta-analysis for each exposure. ^c No limit on start date of search for eligible studies. ^d Includes physical abuse; sexual abuse; emotional, verbal, or psychological abuse; neglect; exposure to domestic violence; household mental illness; household criminal justice involvement; parental separation or divorce; separation from family; parental death.

Childhood and Adolescent Factors Studied in Veterans

A single longitudinal study¹⁰ from 1994 examined the impact of childhood and adolescent experiences on the risk of future homelessness among male Vietnam Veterans. Surveys from the National Vietnam Veterans Study showed an increased risk for experiencing homelessness among male Vietnam Veterans who experienced childhood poverty (RR=1.9, 95% CI [1.3, 2.7]), childhood physical or sexual abuse (RR=3.1, 95% CI [2.0, 4.6]), parental mental illness (RR=1.3, 95% CI [0.9, 1.9], not significant), other childhood trauma (RR=2.3, 95% CI [1.4, 2.6]), childhood psychiatric treatment (RR=6.5, 95% CI [1.9, 22.5]), or foster care (RR=5.3, 95% CI [2.0, 14.2]). Similarly, several cross-sectional studies¹⁸⁻²⁰ reported increased odds of experiencing homelessness among Veterans who experienced ACEs. Lifetime trauma experience was also associated with an increased odds of experiencing homelessness among Veterans in 2 cross-sectional studies.^{19,33}

The longitudinal study¹⁰ of male Vietnam Veterans also found an increased risk for experiencing homelessness among those with a history of a conduct disorder in childhood or adolescence (RR=2.7, 95% CI [1.8, 4.0]). In this study, conduct disorder was defined by behaviors occurring before the age of 15 such as “being in trouble with the law or school officials, playing hooky,

being suspended or expelled from school, or doing poorly academically,” a definition that is notably distinct from the current definition for conduct disorder according to the Diagnostic and Statistical Manual of Mental Disorders (DSM)-5.⁸⁰ Therefore, findings from this study on the risk of homelessness associated with childhood or adolescent conduct disorder may have narrow applicability and may not be generalizable to individuals diagnosed using contemporary criteria.

DURING SERVICE RISK FACTORS FOR HOMELESSNESS IN VETERANS

Combat Exposure

Whether combat exposure increased the risk of experiencing homelessness varied across 5 studies, making the overall impact of combat exposure on the risk of homelessness unclear (Table 3).^{1,7-10} One retrospective cohort study¹ based on VHA administrative data found that post-9/11 Veterans who had been discharged from the military due to misconduct had an increased odds of experiencing homelessness if they had been exposed to combat. Likewise, male Vietnam Veterans with high combat exposure (measured on a scale of combat exposure ranging from 0 to 14) were at an increased risk of experiencing homelessness compared to those with no combat exposure in a study¹⁰ from 1994. However, 2 recent retrospective cohort studies based on responses to VHA’s universal screening question related to housing instability had conflicting findings.^{8,9} In the largest study of more than 4 million Veterans, combat exposure was associated with a lower adjusted odds of homelessness, while another retrospective cohort study specific to female Veterans found no difference in the adjusted odds of experiencing homelessness based on a history of combat. In addition, a recent retrospective cohort study of Veterans diagnosed with Alzheimer’s disease and related dementias found that Veterans with a history of combat had a lower risk of homelessness based on ICD-9/10 codes.⁷

Table 3. Combat Exposure and Homelessness in Veterans

Study Sample size	Population	Comparison	Estimate
Brignone 2018 ¹ N=18,784	Misconduct-discharged Veterans deployed to post-9/11 conflicts in Iraq and Afghanistan	Combat exposure vs no combat exposure	aOR=1.33, 95% CI [1.24, 1.44]
Jutkowitz 2021 ⁷ N=383,478	Veterans with a diagnosis of Alzheimer’s disease and related dementias	Combat exposure vs no combat exposure	aHR=0.69, 95% CI [0.62, 0.78]
Montgomery 2020 ⁸ N=4,633,069	Veterans responding the HSCR 2 or more times	Combat exposure vs no combat exposure	aOR=0.87, 95% CI [0.84, 0.89]
Mulcahy 2021 ⁹ N=194,069	Female Veterans responding to HSCR 3 or more times with initial housing stability	Combat exposure vs no combat exposure	aOR=0.98, 95% CI [0.80, 1.19]
Rosenheck 1994 ¹⁰ N=1,523	Male Vietnam war era Veterans	High level of combat exposure vs no combat exposure	RR=2.1, 95% CI [1.5, 3.0]

Notes. Boldface indicates statistically significant finding.

Abbreviations. aOR=adjusted odds ratio; aPR=adjusted prevalence ratio; CI=confidence interval; HSCR=homelessness screening clinical reminder; HUD-VASH=Housing and Urban Development-VA Supported Housing; RR=risk ratio; VHA=Veterans Health Administration.

VA Service-connected Disability Rating

Veterans with a higher VA service-connected disability rating (which confers financial compensation) had a lower odds of experiencing homelessness compared to those with a lower rating or no service connected-disability rating across 6 studies (Table 4). Findings were statistically significant except in a comparison of female Veterans with a 10-40% service-connected disability rating compared to those without a service-connected disability, in which the risk of experiencing homelessness was similar.⁹

Table 4. VA Disability Rating and Homelessness in Veterans

Study Sample size	Population	Comparator	Estimate
Brignone 2018 ¹ N=19,794	Misconduct- discharged Veterans deployed to post-9/11 conflicts in Iraq and Afghanistan	NSC	SC 0-49%: aOR=0.88, 95% CI [0.8, 0.97] SC 50-100%: aOR=0.51, 95% CI [0.46, 0.56]
Byrne 2015 ⁴ N=17,720	Veterans responding to the HSCR at VHA healthcare facilities	SC≥50%	NSC: aOR=1.79, 95% CI [1.49, 2.15] NSC with VA pension^a: aOR=3.09, 95% CI [2.36, 4.05] SC<50%: aOR=1.44, 95% CI [1.17, 1.77]
Fargo 2017 ⁶ N=449,329	OEF/OIF Veterans discharged as of Dec. 2011	NSC	<i>1st VHA encounter to 1 yr.:</i> SC<50%: aHR=0.62, 95% CI [0.56, 0.68] SC≥50%: aHR=0.5, 95% CI [0.44, 0.57] <i>1-5 yrs. after 1st encounter:</i> SC<50%: aHR=0.72, 95% CI [0.68, 0.77] SC≥50%: aHR=0.71, 95% CI [0.67, 0.76]
Jutkowitz 2021 ⁷ N=383,478	Veterans with a diagnosis of Alzheimer's disease or related diagnoses	Other than Priority Group 1 ^b	SC≥50% (Priority Group 1): aHR=0.54, 95% CI [0.49, 0.60]
Montgomery 2020 ⁸ N=4,633,069	Veterans responding to HSCR at VHA health care facilities	NSC with VA pension	NSC: aOR=0.68, 95% CI [0.66, 0.71] SC<50%: aOR=0.46, 95% CI [0.44, 0.48] SC≥50%: aOR=0.56, 95% CI [0.52, 0.61]
Mulcahy 2021 ⁹ N=194,330	Female Veterans responding to HSCR 3 or more times with initial housing stability	NSC	SCD 10-40%: aOR=1.11, 95% CI [0.97, 1.27] SCD 50-100%: aOR=0.74, 95% CI [0.67, 0.85]

Notes. Boldface indicates statistically significant finding. ^a Non-service connected: VA pension is a needs-based benefit program for wartime Veterans who are age 65 or older or have a permanent and total non-service-connected disability, and who have limited income and net worth. ^b Priority Group 1: Service-connected disability rated as 50% or more disabling; service-connected disability that makes you unable to work; or receipt of the Medal of Honor. *Abbreviations.* aHR=adjusted hazard ratio; aOR=adjusted odds ratio; HSCR=homelessness screening clinical reminder; HUD-VASH=Housing and Urban Development-VA Supported Housing; NSC=not service connected; OEF/OIF=Operation Enduring Freedom/Operation Iraqi Freedom; SC=service connected; VHA=Veterans Health Administration; yr.=year.

Discharge Status

Five cohort studies^{2,6,9,14,15} found that, in most cases, any discharge status aside from honorable was associated with an increased odds of experiencing homelessness (Table 5). The magnitude of effect was greatest among Veterans with dishonorable, other than honorable, or misconduct discharge status and more pronounced in males compared to females, based on 1 study² that stratified results by gender. Additionally, 2 cohort studies^{6,14} found that, compared to routine discharge, disability discharge was associated with a similar or lower risk or odds of experiencing homelessness at the time of their first VHA encounter but a higher risk within 5 years.

Table 5. Discharge Status and Homelessness in Veterans

Study Sample size	Population	Comparator	Estimate
Fargo 2017 ⁶ N=449,329	OEF/OIF Veterans discharged as of Dec. 2011	Routine discharge	<i>1st encounter to 1 yr.:</i> Disability discharge: aHR=0.86, 95% CI [0.70, 1.06] <i>1-5 yrs. after 1st encounter:</i> Disability discharge: aHR=1.41, 95% CI [1.11, 1.79]
Gundlapalli 2015 ¹⁴ N=448,329	Veterans deployed in Afghanistan or Iraq	Routine discharge	<i>1st VHA encounter:</i> Disability discharge: aOR=0.6, 95% CI [0.4, 0.8] Misconduct discharge: aOR=4.7, 95% CI [4.1, 5.5] <i>Within 1 yr. of 1st encounter:</i> Disability discharge: aOR=1.3, 95% CI [1.1, 1.4] Misconduct discharge: aOR=6.9, 95% CI [6.4, 7.5] <i>Within 5 yrs. of 1st encounter:</i> Disability discharge: aOR=1.6, 95% CI [1.4, 1.7] Misconduct discharge: aOR=6.3, 95% CI [5.7, 6.9]
Metraux 2013 ² N=310,685	Veterans discharged between 2005- 2006	Honorable discharge	<i>OEF/OIF Veterans:</i> Dishonorable/bad conduct: aHR=1.79, 95% CI [0.25, 12.7] ^a Other than honorable: aHR=2.37, 95% CI [1.93, 2.92] male; aHR=0.76, 95% CI [0.11, 5.42] female <i>Not OEF/OIF Veterans:</i> Dishonorable/bad conduct: aHR=8.18, 95% CI [4.07, 16.45] male; aHR=3.4, 95% CI [0.47, 24.41] female Other than honorable: aHR=5.39, 95% CI [4.23, 6.86] male; aHR=2.91, 95% CI [1.43, 5.95] female
Mulcahy 2021 ⁹ N=194,330	Female Veterans responding to HSCR 3 or more times with initial housing stability	Non- honorable discharge	Honorable discharge: aOR=0.63, 95% CI [0.49, 0.82]
Naifeh 2022 ¹⁵ N=6,837	Veterans responding to 2 Army STARRS surveys	Honorable discharge	General (under honorable conditions): aHR=1.4, 95% CI [0.8, 2.3] Other than honorable/bad conduct/ dishonorable: aHR= 4.4, 95% CI [2.3, 8.3]

Notes. Boldface indicates statistically significant finding. ^a Males only, data for females not reported.

Abbreviations. aHR=adjusted hazard ratio; aOR=adjusted odds ratio; Army STARRS=Army Study to Assess Risk and Resilience in Servicemembers; HSCR=homelessness screening clinical reminder; OEF/OIF=Operation Enduring Freedom/Operation Iraqi Freedom; VHA=Veterans Health Administration; yr.=year.

Military Sexual Trauma

Veterans who reported military sexual trauma had an increased odds of experiencing homelessness across 4 cohort studies^{1,3,8,9} (Table 6). This finding was consistent across studies of different Veteran populations (eg, OEF/OIF Veterans, misconduct-discharged Veterans, female Veterans only), and in 1 study¹ was consistent over 5 years (although the magnitude of effect decreased with time).

Table 6. Military Sexual Trauma and Homelessness in Veterans

Study Sample size	Population	Estimate
Brignone 2016 ³ N=601,892	OEF/OIF Veterans separated between 2001 and 2011	<i>Within 30 days of 1st VHA encounter:</i> aOR=1.62, 95% CI [1.36, 1.93] <i>Within 1 yr. of 1st encounter:</i> aOR=1.49, 95% CI [1.33, 1.66] <i>Within 5 yrs. of 1st encounter:</i> aOR=1.39, 95% CI [1.24, 1.55]
Brignone 2018 ¹ N=19,794	Misconduct-discharged Veterans deployed to post-9/11 conflicts in Iraq and Afghanistan	aOR=1.65, 95% CI [1.4, 1.95]
Montgomery 2020 ⁸ N=4,633,069	Veterans responding to the HSCR at VHA healthcare facilities	aOR=1.63, 95% CI [1.58, 1.68]
Mulcahy 2021 ⁹ N=194,330	Female Veterans responding to HSCR 3 or more times with initial housing stability	aOR=1.57, 95% CI [1.42, 1.75]

Notes. Boldface indicates statistically significant finding.

Abbreviations. aOR=adjusted odds ratio; HSCR=homelessness screening clinical reminder; OEF/OIF=Operation Enduring Freedom/Operation Iraqi Freedom; VHA=Veterans Health Administration; yr.=year.

Other Service-related Factors

Other aspects of military service have been studied as possible risk factors for homelessness. Two cross-sectional studies^{19,22} found a correlation between experiencing homelessness and enlisted status (compared to being drafted and/or commissioned). In contrast, higher military pay grade was associated with a decreased odds of experiencing homelessness in 3 cohort studies,¹⁻³ and higher number of years of military service was correlated with decreased homelessness in 3 cross-sectional studies.^{18,19,22} Among 3 cohort studies^{4,8,9} comparing OEF/OIF Veterans to non-OEF/OIF Veterans, no differences in homelessness were reported. Similarly, deployment frequency was not associated with experiencing homelessness in 2 cross-sectional studies.^{19,22} Findings regarding the association of service branch and homelessness risk were inconsistent. In a longitudinal study¹ of post-9/11 Veterans discharged for misconduct, the odds of experiencing homelessness were lower among Navy and Air Force Veterans compared to Army Veterans, but similar between Army and Marine Veterans. However, in 2 other longitudinal studies^{2,3}, the odds of experiencing homelessness were generally lower among Marines and Air Force Veterans compared to Army Veterans, but higher among Navy compared to Army Veterans.

POST-SERVICE RISK FACTORS FOR HOMELESSNESS IN VETERANS

General Medical Conditions

The impact of medical conditions on homelessness risk, if any, is unclear (Table 7). Two longitudinal studies^{8,9} examining the odds of homelessness with the presence of any chronic

medical condition had inconsistent findings. A single cohort study¹² reported no difference in homelessness among Veterans with and without (human immunodeficiency virus) HIV. Two cohort studies^{2,7} reported no difference in homelessness among Veterans with traumatic brain injury (TBI), with the exception of a single subgroup of non-OEF/OIF male Veterans, for which an increased risk of experiencing homelessness was observed. In a cohort study⁷ of Veterans with Alzheimer's disease and related dementias, renal disease was associated with lower odds of experiencing homelessness while liver disease, lung disease, and hypertension were associated with higher odds. Findings from cross-sectional studies^{24,29,30,32,52,55,69} were mixed on the association between homelessness and obesity, dementia, and inpatient, emergency room, or outpatient medical visits.

Table 7. Medical Conditions and Homelessness in Veterans

Study Sample size	Population ^a	Comparison	Estimate
Ghose 2013 ¹² N=28,383	HIV-infected and uninfected patients seen in VHA infectious disease and general medical clinics	HIV+ vs HIV-	aOR=0.97, 95% CI [0.72, 1.32]
Jutkowitz 2021 ⁷ N=383,478	Veterans with a diagnosis of Alzheimer's disease and related dementias	Presence vs absence of specific disease	Rheumatic disease: aHR=0.99, 95% CI [.073, 1.34] Renal disease: aHR=0.78, 95% CI [0.67, 0.90] Liver disease: aHR=1.24, 95% CI [1.06, 1.45] Diabetes: aHR=1.08, 95% CI [0.98, 1.18] Hypertension: aHR=1.22, 95% CI [1.12, 1.33] CHF: aHR=0.95, 95% CI [0.82, 1.11] Lung disease: aHR=1.12, 95% CI [1.02, 1.24] TBI: aHR=0.98, 95% CI [0.86, 1.13] Valvular disease: aHR=0.91, 95% CI [0.74, 1.11] Stroke: aHR=0.95, 95% CI [0.85, 1.05]
Metraux 2013 ² N=310,685	Veterans discharged between 2005-2006	TBI vs no TBI	<i>OEF/OIF Veterans:</i> aHR=1.2, 95% CI [0.98, 1.46] male; aHR=1.23, 95% CI [0.54, 2.79] female <i>Not OEF/OIF Veterans:</i> aHR=1.59, 95% CI [1.18, 2.15] male; aHR=1.64, 95% CI [0.85, 3.2] female
Montgomery 2020 ⁸ N=4,633,069	Veterans responding to HSCR at VHA healthcare facilities	Any vs no chronic medical condition	aOR=0.88, 95% CI 0.81, 0.90]
Mulcahy 2021 ⁹ N=194,069	Female Veterans responding to HSCR 3 or more times with initial housing stability	Any vs no chronic medical condition	aOR=1.03, 95% CI [0.91, 1.16]

Notes. Bolding of data indicates a statistically significant finding. ^a Presence of medical conditions determined from VA records.

Abbreviations. aHR=adjusted hazard ratio; aOR=adjusted odds ratio; CHF=congestive heart failure; HIV=human immunodeficiency virus; HSCR=homelessness screening clinical reminder; HUD-VASH=Housing and Urban Development-VA Supported Housing; TBI=traumatic brain injury; VHA=Veterans Health Administration.

Mental Health

Most longitudinal studies found that posttraumatic stress disorder (PTSD), depression, and psychoses or psychotic disorders were associated with an increased odds of experiencing homelessness (Table 8). Among 7 studies^{1,2,7-10,12} examining Veterans with PTSD, 6 reported an increased odds of experiencing homelessness among Veterans with PTSD compared to those without. Similarly, 5 studies^{7-9,11,12} examining Veterans with depression and 4 out of 5 studies^{2,7-9,12} examining Veterans with schizophrenia or other psychotic disorders reported increased odds of experiencing homelessness among Veterans with these disorders. Additionally, the presence of any mental health diagnosis was associated with an increased odds of homelessness among 3 studies^{3,6,13} and among misconduct-discharged Veterans,¹ higher mental health clinic usage (assumed to be a surrogate marker of having a mental health diagnosis) was associated with an increased odds of experiencing homelessness.

Findings were less consistent for other mental health conditions and having a history of a suicide attempt or self-inflicted harm. A single study² reported mixed effects on the risk of homelessness among Veterans with adjustment disorders, anxiety disorders, mood disorders, and personality disorders, and associations varied by gender and service era. A large study⁸ ($N = 4,633,069$) based on VHA administrative data found an increased odds of experiencing homelessness among Veterans with a history of a suicide attempt or self-inflicted harm. However, another large cohort study⁹ based on the same data source but limited to female Veterans found no difference in homelessness risk according to a history of a suicide attempt or self-inflicted harm.

Table 8. Mental Health and Homelessness in Veterans

Mental Health Factor ^a	Study Sample Size	Estimate ^b
Adjustment disorders	Metraux 2013 ² $N=310,685$	<i>OEF/OIF Veterans:</i> aHR=1.53, 95% CI [1.37, 1.71] male; aHR=1.28, 95% CI [0.96, 1.71] female <i>Not OEF/OIF Veterans:</i> aHR=1.45, 95% CI [1.23, 1.72] male; aHR=1.6, 95% CI [1.27, 2.05] female
Anxiety disorders	Metraux 2013 ² $N=310,685$	<i>OEF/OIF Veterans:</i> aHR=1.03, 95% CI [0.9, 1.18] male; aHR=0.92, 95% CI [0.65, 1.31] female <i>Not OEF/OIF Veterans:</i> aHR=1.38, 95% CI [1.15, 1.67] male; aHR=1.02, 95% CI [0.77, 1.36] female
Depression	Ghose 2013 ¹² $N=28,383$	aOR=1.55, 95% CI [1.01, 2.36]
	Jutkowitz 2021 ⁷ $N=1,523$	aHR=1.41, 95% CI [1.30, 1.53]
	Montgomery 2020 ⁸ $N=194,330$	aOR=1.36, 95% CI [1.33, 1.39]
	Mulcahy 2021 ⁹ $N=383,478$	aOR=1.74, 95% CI [1.52, 1.99]
	Tsai 2017 ¹¹ $N=306,351$	aOR=1.21, 95% CI [1.16, 1.26]
Mental health clinic usage	Brignone 2018 ¹ $N=19,794$	aOR=1.85, 95% CI [1.69, 2.02]

Mental Health Factor^a	Study Sample Size	Estimate^b
Mental health diagnoses (any)	Brignone 2016 ³ N=601,892	<i>Within 30 days of 1st VHA encounter: aOR=3.91, 95% CI [3.67, 4.16]</i> <i>Within 1 yr. of 1st encounter: aOR=5.31, 95% CI [5.08, 5.54]</i> <i>Within 5 yrs. of 1st encounter: aOR=8.15, 95% CI [7.64, 8.70]</i>
	Elbogen 2013 ¹³ N=1,090	aOR=2.59, 95% CI [1.26, 5.33]
	Fargo 2017 ⁶ N=449,329	<i>1st VHA encounter to 1 yr.:</i> aHR=3.66, 95% CI [3.36, 3.99] <i>Within 1-5 yrs. of 1st encounter:</i> aHR=4.78, 95% CI [4.23, 5.15]
Mood disorders (any)	Metraux 2013 ² N=310,685	<i>OEF/OIF Veterans:</i> aHR=1.41, 95% CI [1.25, 1.59] male; aHR=1.31, 95% CI [0.96, 1.77] female <i>Not OEF/OIF Veterans:</i> aHR=1.62, 95% CI [1.37, 1.92] male; aHR=1.79, 95% CI [1.4, 2.29] female
Personality disorders (any)	Metraux 2013 ² N=310,685	<i>OEF/OIF Veterans:</i> aHR=1.46, 95% CI [1.24, 1.72] male; aHR=1.49, 95% CI [1.0, 2.22] female <i>Not OEF/OIF Veterans:</i> aHR=1.39, 95% CI [1.12, 1.73] male; aHR=1.05, 95% CI [0.74, 1.49] female
Psychiatric disorders (any)	Rosenheck 1994 ¹⁰ N=1,523	RR=3.7, 95% CI [2.6, 5.4]
Psychotic disorders or psychoses	Ghose 2013 ¹² N=28,383	Schizophrenia: aOR=1.27, 95% CI [0.6, 1.75]
	Jutkowitz 2021 ⁷ N=1,523	Psychoses: aHR=1.63, 95% CI [1.49, 1.77]
	Metraux 2013 ² N=310,685	<i>Psychotic disorders:</i> <i>OEF/OIF Veterans:</i> aHR=1.57, 95% CI [1.22, 2.04] male; aHR=4.22, 95% CI [2.16, 8.23] female <i>Not OEF/OIF Veterans:</i> aHR=2.66, 95% CI [2.04, 3.47] male; aHR=3.18, 95% CI [1.87, 5.39] female
	Montgomery 2020 ⁸ N=194,330	Schizophrenia: aOR=1.02, 95% CI [0.99, 1.06] Other psychoses: aOR=1.32, 95% CI [1.28, 1.35]
	Mulcahy 2021 ⁹ N=383,478	Psychoses: aOR=1.37, 95% CI [1.06, 1.78]
PTSD	Brignone 2018 ¹ N=19,794	aOR=1.25, 95% CI [1.14, 1.36]
	Ghose 2013 ¹² N=28,383	aOR=1.03, 95% CI [0.59, 1.72]
	Jutkowitz 2021 ⁷ N=1,523	aHR=1.26, 95% CI [1.13, 1.40]
	Metraux 2013 ² N=310,685	<i>OEF/OIF Veterans:</i> aHR=1.24, 95% CI [1.09, 1.41] male; aHR=1.57, 95% CI [1.09, 2.26] female <i>Not OEF/OIF Veterans:</i>

Mental Health Factor ^a	Study Sample Size	Estimate ^b
		aHR=0.78, 95% CI [0.54, 1.13] male; aHR=0.86, 95% CI [0.55, 1.34] female
	Montgomery 2020 ⁸ N=194,330	aOR=1.11, 95% CI [1.08, 1.14]
	Mulcahy 2021 ⁹ N=383,478	aOR=1.49, 95% CI [1.27, 1.75]
	Rosenheck 1994 ¹⁰ N=1,523	RR=5.0, 95% CI [3.5, 7.2]
Suicide or self-harm	Montgomery 2020 ⁸ N=194,330	aOR=1.21, 95% CI [1.16, 1.27]
	Mulcahy 2021 ⁹ N=383,478	aOR=0.93, 95% CI [0.64, 1.33]

Notes. Bolding of data indicates a statistically significant finding. ^a Mental health disorders most commonly determined from VA medical records. ^b Comparison is the presence versus the absence of the mental health factor. Abbreviations. aHR=adjusted hazard ratio; aOR=adjusted odds ratio; aPR=adjusted prevalence ratio; OEF/OIF=Operation Enduring Freedom/Operation Iraqi Freedom; OND=Operation New Dawn; PTSD=posttraumatic stress disorder; RR=risk ratio; VHA=Veterans Health Administration; yr.=year.

Substance Use

Substance use was generally associated with an increased odds of experiencing homelessness across studies (Table 9). Five cohort studies^{7-9,11,12} found that alcohol use disorder or alcohol dependence was associated with an increased odds of experiencing homelessness among Veterans. Likewise, 5 cohort studies^{8,9,11,12} reported an increased odds of experiencing homelessness with drug use disorder, weekly illicit substance use, or opioid use disorder (measures that likely overlap but were defined differently in each study). Similarly, 3 studies^{2,7,10} reported an increased risk of experiencing homelessness with substance use generally or substance use disorder. Higher substance use clinic usage (assumed to be a surrogate marker of having a substance use disorder diagnosis) was also associated with an increased odds of experiencing homelessness.^{1,8,16} Among cross-sectional studies, inpatient substance abuse clinic treatment^{29,30} was associated with homelessness. Tobacco use or dependence^{19,24,31,32} was generally associated with an increased odds of experiencing homelessness, although in 1 study²⁴ the effect was no longer significant in an adjusted model.

Table 9. Substance Use and Homelessness in Veterans

Substance Use Factor^a	Study	Estimate^b
Alcohol use disorder	Ghose 2013 ¹² N=28,383	Alcohol dependence: aOR=1.72, 95% CI (1.06, 2.81)
	Jutkowitz 2021 ⁷ N=1,523	aHR=1.87, 95% CI (1.67, 2.10)
	Montgomery 2020 ⁸ N=194,330	aOR=1.26, 95% CI (1.22, 1.30)
	Mulcahy 2021 ⁹ N=383,478	aOR=1.49, 95% CI (1.13, 1.98)
	Tsai 2017 ¹¹ N=306,351	aOR=1.48, 95% CI (1.40, 1.56)
Drug use disorder	Ghose 2013 ¹² N=28,383	Weekly illicit substance use: aOR=1.54, 95% CI (1.08, 2.19)
	Montgomery 2020 ⁸ N=194,330	aOR=1.50, 95% CI (1.45, 1.55)
	Mulcahy 2021 ⁹ N=383,478	aOR=1.77, 95% CI (1.34, 2.35)
	Tsai 2017 ¹¹ N=306,351	aOR=2.48, 95% CI (2.34, 2.62)
Opioid use disorder	Montgomery 2020 ⁸ N=194,330	aOR=2.22, 95% CI (2.04, 2.41)
Substance use	Jutkowitz 2021 ⁷ N=1,523	aHR=2.15, 95% CI (1.84, 2.53)
	Rosenheck 1994 ¹⁰ N=1,523	RR=3.4, 95% CI (2.3, 4.9)
	Metraux 2013 ² N=310,685	<i>OEF/OIF Veterans:</i> aHR=2.59, 95% CI (2.33, 2.87) male; aHR=1.85, 95% CI (1.28, 2.67) female <i>Not OEF/OIF Veterans:</i> aHR=2.72, 95% CI (2.34, 3.16) male; aHR=2.03, 95% CI (1.47, 2.82) female
Substance use clinic usage	Gundlapalli 2014 ¹⁶ N=31,260	<i>Mean increase in encounters:</i> 61-90 days: 1.00 (p NS) 91-180 days: 1.86 (p<0.001) 180-365 days: 1.94 (p<0.001) 1-2 yrs.: 1.98 (p<0.001)
	Brignone 2018 ¹ N=19,794	aOR=2.38, 95% CI (2.12, 2.67)

Notes. Bolding of data indicates a statistically significant finding. ^a Substance use disorders most commonly determined from VA records. ^b Comparison is the presence versus the absence of the substance use factor. *Abbreviations.* aHR=adjusted hazard ratio; aOR=adjusted odds ratio; aPR=adjusted prevalence ratio; OEF/OIF=Operation Enduring Freedom/Operation Iraqi Freedom; OND=Operation New Dawn; RR=risk ratio; yrs.=years.

Other Post-service Factors

Other post-service factors have been studied for their associations with homelessness, with findings limited to a single or few studies. One longitudinal study¹³ reported an increased odds of

experiencing homelessness among Veterans with a history of incarceration. Likewise, experience of adult non-military trauma was associated with an increased odds of experiencing homelessness in a single study.¹⁰

DEMOGRAPHIC CHARACTERISTICS AND HOMELESSNESS IN VETERANS

Demographic factors, some of which span service timeframes (*eg*, gender, race/ethnicity), have been evaluated for associations with homelessness risk. Younger Veterans may have higher odds of experiencing homelessness based on 3 studies.^{4,7,8} However, 1 study² found that OEF/OIF Veterans in older age groups had a higher odds of experiencing homelessness than those aged 18 to 24 years, and another study¹¹ found that Veterans aged 46-55 years had a higher odds of experiencing homelessness compared to other age groups. Among 6 studies of gender,^{1,3,4,7,8,12,17} most reported that females had a lower odds of experiencing homelessness than males. However, 1 study¹ in post-9/11 Veterans discharged for misconduct reported an increased odds of experiencing homelessness among females compared to males. Three cross-sectional studies²⁶⁻²⁸ reported an association between transgender identity and homelessness among Veterans.

Among 9 longitudinal studies^{1,3,4,7,8,10-12} examining racial disparities in homelessness among Veterans, most reported increased homelessness among Black Veterans compared to White Veterans. Increased homelessness was reported among Veterans with Hispanic ethnicity in 2 studies^{3,8} but no difference in homelessness by ethnicity was reported in 1 other study.^{4,5} Among 2 cross-sectional studies,^{29,63} mixed findings were reported on the association between Asian race and homelessness in Veterans.

Among 7 studies examining marital status,^{1,3,7-11} all but 1¹ reported a lower odds of experiencing homelessness among married Veterans compared to those who were not married, including those who were never married, separated, or divorced. Two longitudinal studies^{1,3} reported that Veterans with a higher level of education had a decreased odds of experiencing homelessness. Similarly, among 7 cross-sectional studies,¹⁸⁻²⁴ a higher level of education was generally negatively associated with homelessness among Veterans. Lower financial status and unemployment were associated with an increased odds of experiencing homelessness across 3 longitudinal¹¹⁻¹³ and 3 cross-sectional²³⁻²⁵ studies. Lastly, living in a rural area was associated with a lower odds of experiencing homelessness among Veterans in 2 longitudinal studies.^{7,8}

DISCUSSION

The aim of this systematic review was to synthesize evidence on factors impacting the risk of homelessness among Veterans to inform ongoing VA efforts to reduce and prevent Veteran homelessness and to identify areas for future research. Despite searching for studies of both community and individual-level factors associated with homelessness among Veterans, we only identified studies of individual-level factors. Using a best-evidence approach, we focused on studies that evaluated potential risk and protective factors before homelessness occurred to establish cause and effect. As such, the strongest evidence for many factors was from studies that followed participants over time, identifying and measuring factors that differentiated those who eventually become homeless from those who remained stably housed. We categorized factors as occurring before, during, or after military service, recognizing that defining a specific timeframe for some factors, including the presence of mental health and substance use disorders, is methodologically challenging. We also synthesized evidence on demographic factors, many of which were not bound to a specific timeframe, such as race and gender.

Overall, the following individual-level factors were consistently associated with an increased risk of experiencing homelessness in studies providing longitudinal evidence: ACEs (studied in general populations and Veterans), discharge status aside from honorable, lower service-connected disability rating or no service-connected disability rating, history of military sexual trauma, and presence of a mental health and/or substance use disorder. Having a history of incarceration and non-military-related trauma in adulthood were also factors associated with an increased risk of experiencing homelessness, although these factors were only evaluated in a single study. Additionally, enlisted status (compared to drafted or commissioned status) and lifetime trauma history were associated with homelessness in cross-sectional studies (considered *risk correlates* and not necessarily true *risk factors*, given study designs). In contrast, honorable discharge status, having a higher military pay grade, and having a higher service-connected disability rating were consistently associated with a lower risk of experiencing homelessness in studies providing longitudinal evidence. Completing more years of service was also identified as a potential protective factor in cross-sectional studies. In terms of demographics, Veterans who were male, Black, and/or unmarried were more likely to experience homelessness, while those living in a rural area appeared to have a lower risk of homelessness. Additionally, having a lower education level or identifying as transgender were factors associated with a greater risk of experiencing homelessness in cross-sectional studies.

Among individual-level factors with longitudinal evidence (best evidence), the strongest associations (based on the magnitude of the reported effect size) were observed for higher military pay grade (lower homelessness risk), not being married (greater risk), discharge status aside from honorable (greater risk), any mental health diagnosis (greater risk), and ACEs (greater risk).

Findings on combat exposure were mixed and the overall association between combat exposure and homelessness risk is unclear. Findings were also inconsistent for other factors related to military service including service era and military branch. Associations between chronic medical conditions and/or medical co-morbidities and homelessness have been less frequently studied compared to mental health and substance-related conditions. Available evidence does not suggest a pattern of increased or decreased homelessness risk based on chronic medical conditions and/or medical co-morbidities and so the nature of these associations, if any, remains unclear.

VHA currently supports several initiatives to reduce and prevent homelessness among Veterans. Findings from this review may help further inform outreach efforts or service provision for Veterans with identified individual-level risks for experiencing homelessness. However, this evidence base has several limitations, as discussed in more detail below, and important research gaps exist.

Community factors, such as housing access and affordability, may account for why some Veterans experience homelessness while others with similar individual-level vulnerabilities remain stably housed. Structural models of homelessness focus on macro-level trends related to housing affordability and access, safety net spending, labor market conditions, and eviction rates.⁸¹ Researchers who study housing and homelessness have argued that personal experiences and circumstances that may make an individual more likely to experience homelessness should not be evaluated outside of the context of structural factors at the community level that create conditions for homelessness.³⁵

A socio-ecological view of homelessness underscores that the relative importance of a given individual-level factor, such as having a mental health disorder, to the risk of experiencing homelessness greatly depends on factors external to the individual, such as the presence or absence of affordable housing in that individual's community. For example, 2 individuals with similar demographic profiles and similar exposures in terms of childhood experiences, military service, and post-service circumstances could have different levels of risk for experiencing homelessness depending on their unique family and social networks, presence of a local safety net and access to housing resources, and the degree of housing scarcity in their specific geographic locations. To date, little research has been conducted on the effects of structural factors on Veteran homelessness risk. Consequently, our understanding of the mechanisms that lead to homelessness among Veterans is incomplete. A potential consequence of this important gap in the evidence is that predictive models of homelessness risk as well as programs and policies designed to reduce and prevent Veteran homelessness may overly emphasize the importance of individual factors, even if community-level factors are predominantly driving homelessness rates in some locations.

Finally, while we used a general definition of homelessness to determine study eligibility—and many included studies describe the relationship of a certain factor with “homelessness”—it is important to consider variation in the meanings and experiences of homelessness across individuals. For instance, Veterans experiencing homelessness may be unstably housed but have regular access to shelter, or they may frequently be unsheltered. Another example is that some Veterans experiencing homelessness may remain housed after accessing permanent supportive housing or other stable housing in their community, while others may have great difficulty maintaining housing even if it is available.

We identified, but did not formally include among our results, several studies that discuss factors that may confer greater risk of unsheltered (versus sheltered) homelessness or of returning to homelessness after being housed. Factors associated with unsheltered homelessness are broadly consistent with those that may make a Veteran more vulnerable to homelessness overall, including being male, older, or unmarried, and having a substance use or other mental health disorder.^{82,83} Other factors associated with unsheltered homelessness include lower levels of VHA eligibility and greater use of VHA inpatient services with infrequent use of VHA outpatient services;⁸² having a criminal justice history, financial hardship, or limited social

support,⁸³ or living in a community with poor shelter access or higher rents.⁸³ Several studies^{5,84,85} also reported that many of these factors were common among Veterans who returned to homelessness after enrollment in a housing support program. These studies were generally cross-sectional, but their findings highlight the confluence of individual and community factors that may increase (and sustain) Veterans' risk of homelessness.

LIMITATIONS

This evidence base has several important limitations. First, most studies relied on retrospective analysis of medical record data to measure individual risks. While information on certain risks may be straightforward to ascertain (such as demographic characteristics and service era), the availability and timing of data related to some risk factors may be limited. For example, data regarding military sexual trauma depend on Veterans being asked a screening question at the point of care and were reported as missing for 23% of participants in 1 study.³ Variability in screening practices resulting in missing data may skew the observed effect for a given risk factor. Moreover, studies based on VHA medical record data only capture information related to Veterans receiving VHA services. Because access points to VA housing resources are often integrated with other services related to diagnosing and treating mental health and substance use disorders, these conditions may be overrepresented in samples of Veterans using VA services. Findings may or may not be generalizable to Veterans not receiving health care or receiving care outside of VHA settings.

Second, although cohort studies attempted to verify potential risk factors that occurred before homelessness, the timing of some factors may be inherently difficult to determine. For example, in cohort studies, mental health diagnoses were recorded after military service (while in VHA care) and prior to experiencing homelessness. However, mental health symptoms may have occurred prior to or during service and/or been exacerbated by experiences during service. The same limitation applies to other factors with the potential to span service timeframes, such as substance use.

Third, most studies used analytic methods that give the association between individual risk factors and homelessness (*ie*, while holding others constant). This approach limits insights into the relationships between factors and the importance of 1 factor relative to others. Analyses of ACEs as a risk factor for later homelessness, for example, may tend to oversimplify an association that is mediated by other factors such as poverty and race/ethnicity.⁷⁹

Fourth, methods used to measure and define homelessness varied across studies and all have potential limitations. For example, PIT counts like those used by HUD taken on a single night may overestimate long-term chronic homelessness and underestimate the prevalence of transient or episodic homelessness.^{86,87} Moreover, definitions used in research may not necessarily align with how individuals self-report homelessness (which could be more nuanced) or how homelessness is assessed in a health care setting and captured in medical record data. Unstable housing, a term that refers to the potential to become homeless, is sometimes used interchangeably with the term homeless, further complicating efforts to identify individuals experiencing homelessness using medical record data.⁸⁸ Whether individual-level factors associated with homelessness vary according to what definitions are used is unclear.

Finally, most studies included in this review were published before the start of the COVID-19 pandemic and prior to changes in the illicit drug supply leading to increased use of potent synthetic opioids and stimulants among those with substance use disorders.⁸⁹ The COVID-19 pandemic and the ongoing crisis of substance use and substance-related deaths have had profound impacts on US society generally, and may have increased the vulnerability of Veterans already at-risk for experiencing homelessness in ways that have yet to be described.⁹⁰

Limitations of our review methods include our use of sequential review (rather than dual independent review) for data abstraction and risk of bias assessment.

FUTURE RESEARCH

The following are considerations for future research on factors impacting the risk of homelessness among Veteran populations:

- Conduct analyses of structural factors that may be impacting Veteran homelessness, ideally in ways that integrate community-level data with individual-level data to provide a comprehensive assessment of risk and protective factors. An example of this type of study is one that integrated individual-level data with county-level data to predict homelessness among active-duty Army soldiers.⁹¹
- Employ methods frequently used in social science settings, like latent class analysis, to improve understanding of how risk factors for homelessness co-occur and together increase homelessness risk. Examining mediation relationship could also be informative. For instance, despite having PTSD or another mental health diagnosis that could increase vulnerability to homelessness, having a service-connected disability for that diagnosis (which confers financial compensation) may reduce an individual's actual risk of homelessness substantially. Similarly, higher risk associated with dishonorable/other than honorable discharge might be a proxy for lack of access to VA benefits/services.
- Consider further use of qualitative methods to describe complex interplays between structural and individual-level factors impacting homeless, as have been used in studies of homelessness among the general population.⁹²

CONCLUSION

The aim of this systematic review was to synthesize evidence on factors associated with Veteran homelessness. The strongest associations were observed for higher military pay grade (lower homelessness risk), not being married (greater risk), discharge status aside from honorable (greater risk), any mental health diagnosis (greater risk), and ACEs (greater risk). Available evidence has important gaps and limitations. To date, little research has been conducted on the effects of structural factors, such as those that reduce housing security or make stable housing difficult to obtain, on Veteran homelessness risk. Consequently, our understanding of the mechanisms that lead to homelessness among Veterans is incomplete. Future research should aim to integrate community and individual factors to provide a more comprehensive understanding of the pathways to Veteran homelessness, which if incorporated into a predictive model of homelessness, would likely result in a more accurate assessment of a Veteran's vulnerability to homelessness.

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