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Risk of Incarceration among Male Veterans and Nonveterans

Are Veterans of the All Volunteer Force at Greater Risk?

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In this study, we used data from national surveys of U.S. veterans and nonveterans to investigate whether military service increased risk for incarceration compared to non-veteran peers. White veterans aged thirty-five to fifty-four (early years of the All Volunteer Force and the Vietnam era) were at higher risk for incarceration than white nonveterans. Black and Hispanic veterans of these eras were generally at lower risk of incarceration than age- and race-matched nonveterans. For all racial/ethnic groups, the risk of incarceration among veterans compared to nonveterans declined among those who served in the later years of the implementation of the All Volunteer Force. These findings may reflect the disadvantaged backgrounds of recruits during the early implementation of the All Volunteer Force, from 1973 to 1980, and the improved quality of personnel recruited after 1980. Among all males, the risk of incarceration was not elevated among Vietnam-era and World War II veterans.

Keywords: *veterans; crime; incarceration; race; ethnicity*

Since the Vietnam War, there has been increasing concern about the impact of military service and especially combat exposure on the well-being of veterans. While much of the focus has been on the psychological effects of war zone service and posttraumatic stress disorder (PTSD) in particular,¹ there has been simultaneous attention to the risk of other adverse effects such as unexplained physical illness, as in Gulf War Syndrome;² unemployment;³ divorce;⁴ suicide;⁵ homelessness;⁶ and incarceration.⁷ Male veterans may be at greater risk of incarceration than men in the general population as a result of mental health conditions such as PTSD but also from difficulties reintegrating into civilian society after extensive periods of time away from civilian employment and supportive social networks. Several studies have suggested that mental health problems including PTSD, substance abuse, and other psychiatric disorders may be risk factors for imprisonment among veterans.⁸

It has also been noted that an estimated 19 to 20 percent of incarcerated veterans report past exposure to combat,⁹ and some studies suggest that incarcerated veterans are more likely to have been involved in combat than nonincarcerated veterans.¹⁰ In addition, some studies suggest that greater exposure to combat is associated with a higher frequency of violent acts, expressed hostility,¹¹ and antisocial behavior,¹² which may also increase the risk of incarceration.

Many veterans have difficulty making the transition from the military to civilian society, and these difficulties in and of themselves may increase the risk of incarceration.¹³ Veterans have been shown to suffer from such problems as unemployment and underemployment,¹⁴ alienation and difficulties in "putting the war behind them,"¹⁵ and social isolation.¹⁶ Vietnam veterans in particular are described as having suffered from reintegration difficulties because of their negative homecoming experience,¹⁷ the controversial nature of the war they fought,¹⁸ and their relative youth at the time of entry into military service.¹⁹

The few studies that have directly examined veterans' involvement in the criminal justice system report mixed findings. Three surveys found that compared to their civilian peers, veterans who served in the Vietnam theater had higher arrest rates²⁰ and greater criminal-justice system involvement.²¹ Card also found that both Vietnam-theater and Vietnam-era veterans had higher conviction rates than nonveterans.²² A review by Beckerman and Fontana²³ concluded that most studies indicate that Vietnam *theater* veterans (i.e., those who served in the war zone) have higher arrest rates than nonveterans but that Vietnam *era* veterans (those who served during the period of war but who did not serve in a war zone) do not have higher arrest rates. On the other hand, a United States Department of Justice study that used data on veterans from all periods of service found that they were incarcerated at less than half the rate of adult male nonveterans.²⁴

Past studies have been limited by their lack of focus on how the relative risk of incarceration among veterans as compared to nonveterans varies across age and racial or ethnic subgroups. Minorities and younger adult men are at substantially greater risk of incarceration than other men, and veterans are underrepresented among younger men while including a growing proportion of minorities. In this study, we use data from a national survey of United States inmates and data from the 2000 decennial census to compare the relative risk of incarceration of male veterans as compared to nonveterans, stratified by age and race/ethnic subgroups.

Methods

This study was based on an analysis of the relative risk of incarceration among veterans and nonveterans using data from a survey of prisoners and census data from the general population.

Data Source

The data presented here are derived from the 1997 Survey of Inmates in State and Federal Correctional Facilities²⁵ and the 2000 decennial census.²⁶ The Survey of Inmates was carried out by the Bureau of the Census for the Bureau of Justice Statistics of the United States Department of Justice. The survey provided nationally representative data on United States inmates held at state and federally operated prisons. The interviews were conducted from June through October 1997.²⁷

The sample design for the survey was a stratified two-stage selection, with prisons selected first and then inmates chosen from those in the selected prisons. The selection involved several steps for both prisons and inmates. First, for the 1,262 state prisons, the thirteen largest male prisons and the seventeen largest female prisons were selected. A list of the remaining 1,265 state male prisons and 261 state female prisons was stratified by census region (Northeast except New York, New York, Midwest, South except Texas, Texas, West except California, and California). The prisons within each of these regions were then classified by facility type (confinement or community based), security intensity (five levels), and size. From this list, 250 additional state prisons were randomly selected.

Federal prisons were chosen in an analogous manner. The largest male prison and the two largest female prisons were selected to be in the sample. The remaining prisons were stratified by security level and ordered within a stratum by population size, and then thirty-seven additional federal prisons were randomly selected (for further details, see Department of Justice 2000²⁸).

In the second stage of sample selection, inmates in state prisons were randomly selected from a list provided by each prison. The total number of prisoners selected at each state prison was based on prison size and the gender of the prison inmates. A total of 12,269 males and 3,116 females were sampled from state prisons. For federal prisons, the sample was drawn in two stages to make sure that non-drug offenders would be included in the sample in large enough numbers to be analyzed. First, 5,854 males and 1,875 females were randomly selected from a central list using a random start and a predetermined sample interval. Next, from these 7,729 inmates, one in every three drug offenders and all the non-drug offenders were selected, resulting in a sample of federal prisoners that consisted of 3,525 males and 954 females.

Of the 1,526 United States prisons, 320 (280 state and forty federal) were selected. Only three prisons refused to participate, and two closed before interviewing began. These five prisons were all-female facilities. Of the inmates incarcerated at the selected prisons, 19,984 were randomly chosen for an interview (from a total United States prison population of 970,526 prisoners). Interviews were completed for 18,326 inmates. Each interview was an hour long and used computer-assisted personal interviewing. Inmates were assured of confidentiality.

The survey was weighted to account for the sampling design and nonresponse. The weights were used to estimate population-level numbers of veterans and nonveterans within each age and race/ethnic category. We restricted the sample to men because of the low number of female inmates who had served in the military. After removing women, the population of inmates used for our analysis was 1,075,202, of whom 144,511 (13.4 percent) were veterans.

Two files were extracted from the census. The first included data on age, race, and gender of all United States veterans, while the second contained comparable data on nonveterans. Both extracts also included a variable that was used to weight the surveyed cases so as to generate estimates of the total United States population. All individuals in these two extracts were seventeen years and older. So that the age of individuals analyzed in the census data matched that of those of the inmate sample, seventeen- and eighteen-year-olds were removed from the two census extracts. Thus, we began with an estimated general population of 189,724,726 in 2000 that was reduced to 75,253,678 by the exclusion of women and individuals younger than nineteen. These exclusions reduced the total veteran population for analyses from 26,568,966 to 24,965,550, 33 percent of males nineteen and older.

Measures

Three measures were used in our analysis: age, race/ethnicity, and for inmates, an indicator of service in the armed forces. Since the inmate survey was conducted three years before the United States census, three years were added to the inmates' ages to represent their age in 2000 and thus to maintain the comparability of the prisoner data with that of the census. Age was summarized in six categories: nineteen to twenty-four, twenty-five to thirty-four, thirty-five to forty-four, forty-five to fifty-four, fifty-five to sixty-four, and sixty-five and older. Two rules were used to classify individuals into one of the following four race and ethnic categories: whites, blacks, Hispanics, and Other. First, respondents who reported more than one racial category were classified as Other. Second, Hispanics, regardless of their racial category, were classified as Hispanic. The first rule was only applied to the census data, since the inmate data did not specify more than one racial category for an individual.

Analysis

There were several steps to the analysis. First, for descriptive purposes, we calculated the percentage of all veterans who were in prison for each age and race/ethnicity category.

Next, we determined the percentage of veterans among men in prison and among men in the general population by age and race/ethnicity, and we calculated the risk ratio for each age and race/ethnicity category, that is, the ratio of the number of prisoners who

Table 1
Percentage of Male Prisoners among United States Veterans
by Age and Race in 2000

Race/Ethnicity	Age					
	19–24	25–34	35–44	45–54	55–64	65 and >
Whites	.19	.71	1.12	.59	.25	.07
Blacks	.54	2.90	4.77	2.85	.98	.20
Hispanics	.00	.93	2.17	1.14	.28	.19
Other	.00	.35	1.45	.82	.23	.22
All males	.20	1.05	1.83	.86	.30	.08

were veterans to the number of prisoners that would be expected to be veterans given their representation in the general population. Ratios greater than one indicate more veterans in prison than might be expected based on their proportions in the general population. A two-sided score test distributed on a standard normal distribution was then used to determine whether the risk ratio was significantly different from one.²⁹

Results

Veteran Incarceration Rate

For all four racial/ethnic groups, the percentage of veterans that were incarcerated peaked in the thirty-five to forty-four age group, with very low levels of incarceration for the youngest and oldest age groups (Table 1). Black veterans were far more likely to be incarcerated than veterans of other racial/ethnic groups. Hispanics were incarcerated at rates that were less than half that of blacks, regardless of age. The incarceration rate of whites ranged from one-fourth to one-third that of blacks across age groups. Those veterans who were classified as Other were incarcerated at similar rates to whites.

Proportion of Veterans in Federal and State Prisons and the General Population

The top two panels of Table 2 show the proportion of veterans among age and race/ethnic categories of incarcerated men and among men in the general population. There is a substantial increase by age in the percentage of men who are veterans among both inmates and in the general population, reflecting the large percentage of men who served in World War II and during the Korean and Vietnam conflicts.

Table 2
Percentage of Male Veterans in Federal and State Prisons and in the General Population as well as the Relative Risk Ratio of Being Imprisoned for Veterans as Compared to Nonveterans

Percentage of Prison and Jail Population	Age					
	19–24	25–34	35–44	45–54	55–64	65 and >
Race/Ethnicity						
Whites	1.9	8.3	18.8	39.5	43.7	73.0
Blacks	0.5	4.2	14.2	24.2	23.0	29.5
Hispanic	0.0	1.9	8.2	12.0	7.7	36.6
Other	0.0	2.1	19.3	27.7	27.7	50.0
All males	0.7	4.8	14.9	28.5	31.2	56.3
Percentage of General Population						
Whites	2.8	10.1	13.2	32.1	46.3	69.2
Blacks	2.7	11.9	19.7	31.0	33.8	50.2
Hispanic	1.6	4.4	7.6	16.1	20.4	31.8
Other	2.1	5.7	9.0	18.2	24.0	35.8
All males	2.5	9.0	13.0	29.7	42.1	64.3
Risk Ratio ^a						
Race/Ethnicity	19–24	25–34	35–44	45–54	55–64	65 and >
Whites	.68	.82*	1.42**	1.23**	.94	1.06
Blacks	.20**	.35**	.72**	.78**	.68**	.59**
Hispanic		.43**	1.08	.74*	.38**	
Other		.36*	2.13**	1.52*	.76	
All males	.30**	.53**	1.15**	.96	.74**	.88*

a. Blank spots indicate that the expected value for the number of veterans in prison or the total number of prisoners minus the expected number of veterans in prison was five or less. For the estimated *z* score and significance level to be meaningful, these values must be greater than five. Hispanics seventeen to twenty-four was zero since there were no veterans in prison from this category.

* < .05. ** < .001.

Veterans' Actual to Expected Rate of Incarceration

The bottom panel of Table 2 shows the ratio of the percentage of prisoners who are veterans to the proportion expected from their representation in the general population, for specific age and race/ethnic categories. A significantly greater number of white veterans aged thirty-five to forty-four and forty-five to fifty-four were incarcerated than would be expected (risk ratios of 1.42 and 1.23, respectively). In contrast, the risk ratio for white veterans aged twenty-five to thirty-four was modestly but

significantly lower than expected (.82), and incarceration rates for white veterans older than fifty-five were not significantly different than expected.

In contrast with whites, no cohort of black or Hispanic veterans showed significantly higher than expected risk of incarceration. In fact, with the exception of Hispanic veterans thirty-five to forty-four years old, the risk of incarceration among black and Hispanic veterans was significantly less than would be expected from their representation in the general population. Risk ratios for black veterans ranged from .20 to .78. Risk ratios for Hispanic veterans were generally similar, ranging from .38 to .74, with the exception of the thirty-five to forty-four age group, which had a non-significant risk ratio of 1.08. The results for those veterans classified as Other were mixed. Within the thirty-five to forty-four and forty-five to fifty-four age groups, the risk ratio showed a large and significant risk; while the twenty-five to thirty-four and the fifty-five to sixty-four age groups had lower than expected risk, only the twenty-five to thirty-four age group's was significantly so.

Combining all racial/ethnic groups together, veterans in the thirty-five to forty-four age group had a greater risk of incarceration than expected (1.15), while veterans of all other age groups except those aged forty-five to fifty-four were incarcerated at significantly less than expected rates, particularly those in the nineteen to twenty-four age group (.30) and in the twenty-five to thirty-four age group (.53).

Discussion

This study examined the relative risk of incarceration among veterans as compared to nonveterans through a comparison of the proportion of veterans in age and race/ethnic subgroups of imprisoned men and men in the general population. White veterans aged thirty-five to forty-four and forty-five to fifty-four were represented in the prison population at a rate that was greater than expected. These two groups of veterans are likely to have served during two quite different periods of military service. Veterans who were forty-five to fifty-four years old in 2000 would have been nineteen years old (the typical age of enlistment) between 1965 and 1974, the primary years of entry into military service during the Vietnam conflict. In contrast, veterans aged thirty-five to forty-four in 2000 would have been nineteen between 1975 and 1984, during the early years of the All Volunteer Force (AVF).

The higher risk ratios for white veterans aged thirty-five to forty-four may be associated with the recruitment processes during the early period of the AVF, in which the reliance on volunteers was associated with a reduction in the quality of military personnel.³⁰ The lack of pay comparability with civilian jobs and an improving civilian job market during the early years of the AVF as well as the loss of GI bill benefits in 1976 reduced recruit quality during this period.³¹ Studies comparing military volunteers during the early phase of the AVF to civilians of the same age found that AVF volunteers had slightly lower socioeconomic status than their

nonveteran peers,³² poorer intellectual-aptitude test scores,³³ a lower likelihood of high school graduation,³⁴ and greater problems with substance abuse.³⁵ Analysis of data from the 1980 Epidemiologic Catchment Area (ECA) study also found that in comparison to white nonveterans of the same age, white veterans of the immediate post-Vietnam period had higher prevalence of psychiatric illnesses, substance abuse, and antisocial personality disorders.³⁶

Although these findings may help account for the high risk of incarceration of white veterans who served in the early period of the AVF era, they do not explain why older white Vietnam era veterans were also at such a high relative risk for incarceration while minority veterans were not. One possible explanation is that white veterans during the Vietnam era have a particularly high prevalence of PTSD and other psychiatric or substance abuse disorders. However, data from the 1990 ECA study indicate that although white Vietnam-era veterans had higher levels of substance abuse disorders than nonveterans, they did not significantly differ from civilians with regard to psychiatric disorders. Additionally, data from the ECA study indicate that minority veterans of the Vietnam era had a similarly greater prevalence of substance abuse disorders than their civilians peers,³⁷ yet these veterans were not at greater risk for incarceration than civilians. Another possible explanation for our findings is that exposure to combat and resultant PTSD increased the risk of incarceration among white veterans. However, both black and Hispanic Vietnam-theater veterans had more severe combat exposure than white Vietnam-theater veterans and higher rates of PTSD but do not show significantly higher rates of incarceration than their nonveteran peers.³⁸

An alternative explanation is that white Vietnam-era veterans were less well off than equivalently aged white civilians at the time of their entry into the military, while minority Vietnam-era veterans were better off than their peers. In the years preceding the Vietnam era (i.e., 1950 to 1966), 54 percent of blacks were rejected by the military because of low scores on the Armed Forces Qualification Test, while only 19 percent of whites were rejected.³⁹ During the Vietnam era, white recruits were poorer than other white males, while black recruits had higher family incomes than comparable civilians.⁴⁰ In addition, fathers of white Vietnam-era veterans were more likely to have had blue-collar jobs and to be less well educated than fathers of white civilians of the same age, while the fathers of black Vietnam-era veterans had roughly similar occupations to and were better educated than the fathers of equivalently aged nonveterans.⁴¹

Indicators of the postwar experiences of veterans and nonveterans may also help explain these observed differences. In 1977, white Vietnam-era veterans were less well educated than their peers, while black Vietnam-era veterans were better educated than their peers,⁴² primarily because black Vietnam veterans took greater advantage of veterans' educational benefits.⁴³ Of related interest is that in 1977, the weekly wage rate of black Vietnam-era veterans exceeded that of their peers by forty-two dollars, while the difference between white Vietnam-era veterans and

nonveterans was only nineteen dollars.⁴⁴ Sociological characteristics other than combat exposure seem to better explain the greater risk of incarceration for white (but not black) Vietnam veterans as compared to their age-matched peers.

For all periods except the immediate post-Vietnam era, the representation of black and Hispanic veterans in the prison population was significantly lower than expected, suggesting either that benefits of military service, such as education or training, are of special benefit to blacks and Hispanics or that black and Hispanic veterans were better off than their peers when they entered military service. With respect to the former, military service has been judged to be especially beneficial for minorities because it may remove them from environments with few resources, provides a relatively level competitive field, and offers an experience working in a large organization with members of other racial/ethnic groups.⁴⁵ Many studies have shown that military service is more beneficial for minorities than for whites with respect to future earnings and job prospects, although the findings seem to be strongest for studies of those who served in World War II and the Korean War.⁴⁶ A more recent study that used 1987 enlistment data found that black enlistees were drawn disproportionately from areas in which black family incomes are relatively high. This pattern was reversed for all recruits. This study also found that black enlistees had better educational qualifications than their peers, which was not the case for whites.⁴⁷ These differences still existed in 2002, when more than 95 percent of all new military recruits (both whites and minorities) and about 85 percent of white civilians had either a high school diploma or a general equivalency diploma (GED), as contrasted with only 74 percent of black and 60 percent of Hispanic civilians.⁴⁸ It is important to keep in mind that although these factors appear to be associated with a lower relative risk of incarceration among minority veterans, black veterans, especially, were still found to have higher incarceration rates than white veterans.

One last trend of note is that the relative risk of incarceration dropped dramatically for all veterans, particularly minorities, who served during later periods of the AVF (i.e., the two youngest age groups). This trend may reflect the increasing success of the military in the 1980s and 1990s in recruiting higher quality personnel as a result of increased pay and benefits, enlistment incentives, more experience and skill in recruiting better qualified volunteers, and higher youth unemployment during parts of this period.⁴⁹ It is also possible that the implementation of a "zero tolerance" policy toward illicit drug use among military personnel in the 1980s lowered rates of substance abuse among veterans.⁵⁰ Improvements in the quality of military personnel are also indicated by greater high school graduation rates and higher scores on the Armed Forces Qualification Tests among recruits as compared to nonrecruits in recent years.⁵¹

Limitations

There are two potential limitations of our study that deserve comment. First, we may not have fully captured the number of incarcerated individuals, since individuals

who were incarcerated in county jails were not included in the survey. Additionally, imprisoned veterans may not identify themselves as veterans for fear of losing benefits for themselves or their families.⁵² However, racial and ethnic subgroups should not have been differently affected by this issue.

Second, increasing the age of the inmates by three years to maintain the comparability of the prisoner data with those of the census may have affected our results. To the degree that younger people are at greater risk for incarceration, the number of prisoners in older age groups may have been somewhat inflated.

Conclusion

After peaking in the immediate post-Vietnam cohort of veterans, we found substantial declines in the relative risk of incarceration among veterans in recent cohorts across all racial and ethnic groups. These findings are best explained by changing patterns of recruitment and especially by changes in the quality of recruits after the implementation of the AVF in 1973. White veterans aged thirty-five to fifty-four were at significantly higher risk of incarceration than their peers, while black and Hispanic veterans were generally at lower risk for incarceration than their peers for all age groups. These findings are likely caused by differences in selectivity across racial and ethnic subgroups when it came to recruitment, with black and Hispanic recruits' tending to be better off than their peers and the opposite's being true for white recruits.

Notes

1. Josefina Card, *Lives after Vietnam: The Personal Impact of Military Service* (Toronto: Lexington Books, 1983); Arthur Engendorf, Charles Kadushin, Robert Laufer, George Rothbart, and Lee Sloan, *Legacies of Vietnam: Comparative Adjustment of Veterans and Their Peers* (New York: The Center for Policy Research, Inc., 1981); Richard A. Kulka, William E. Schlenger, John A. Fairbank, Richard L. Hough, B. Kathleen Jordan, Charles R. Marmar, and Daniel S. Weiss, *Trauma and the Vietnam War Generation: Report of Findings from the National Vietnam Veterans Readjustment Study* (New York: Brunner/Mazel, 1990); Barry J. Levin and David O. Ferrier, *Defending the Vietnam Combat Veteran* (Los Angeles: Vietnam Veterans Legal Assistance Project, 1989).

2. Howard Frumkin, "Agent Orange and Cancer: An Overview for Clinicians," *CA: A Cancer Journal for Clinicians* 53, 4 (2003): 245–55; Gregory C. Gray, Gary D. Gackstetter, Han K. Kang, John T. Graham, and Ken C. Scott, "After More Than 10 Years of Gulf War Veteran Medical Evaluations, What Have We Learned?," *American Journal of Preventive Medicine* 26, 5 (2004): 443–52; Robert W. Haley, Thomas L. Kurt, and Jim Hom, "Is There a Gulf War Syndrome? Searching for Syndromes by Factor Analysis of Symptoms," *Journal of the American Medical Association* 277, 3 (1997): 215–22; W. H. Wolfe, J. E. Michalek, J. C. Miner, A. Rahe, J. Silva, W. F. Thomas, W. D. Grubbs, M. B. Lustik, T. G. Karrison, and R. H. Roegner, "Health Status of Air Force Veterans Occupationally Exposed to Herbicides in Vietnam I. Physical Health," *Journal of the American Medical Association* 264, 14 (1990): 1824–31.

3. Michael J. Boivin, "Forgotten Warriors: An Evaluation of the Emotional Well-being of Presently Incarcerated Vietnam Veterans," *Genetic, Social, and General Psychology Monographs* 113, 1 (1987): 109–25; Engendorf et al., *Legacies of Vietnam*; Kulka et al., *Trauma and the Vietnam War Generation*;

Holly Prigerson, Paul Maciejewski, and Robert Rosenheck, "Combat Trauma: Trauma with the Highest Risk of Delayed Onset and Unresolved Posttraumatic Stress Disorder Symptoms, Unemployment and Abuse Among Men," *Journal of Nervous and Mental Disease* 198, 3 (2001): 99–108; Paul Starr, James Henry, and Raymond Bonner, *Discarded Army: Veterans after Vietnam* (New York: Charterhouse, 1973).

4. Card, *Lives after Vietnam*; Kulka et al., *Trauma and the Vietnam War Generation*; Levin and Ferrier, *Defending the Vietnam Combat Veteran*; J. M. Stellman, S. D. Stellman, and J. F. Sommer, "Social and Behavioral Consequences of the Vietnam Experience among American Legionnaires," *Environmental Research* 47, 2 (1988): 129–49.

5. Tim A. Bullman and Han K. Kang, "The Risk of Suicide among Wounded Vietnam Veterans," *American Journal of Public Health* 86, 5 (1996): 662–67; Al Fontana and Robert Rosenheck, "Attempted Suicide among Vietnam Theater Veterans: A Causal Model of Etiology in a Community Sample," *American Journal of Psychiatry* 152, 6 (1994): 102–9; Michael T. Lambert and Robert D. Fowler, "Suicide Risk Factors among Veterans: Risk Management in the Changing Culture of the Department of Veterans Affairs," *Journal of Mental Health Administration* 24, 3 (1997): 350–58; Starr, Henry, and Bonner, *Discarded Army*.

6. Gail Gamache, Robert Rosenheck, and Richard Tessler, "Military Discharge Status of Homeless Veterans with Mental Illness," *Military Medicine* 165, 11 (2000): 803–8; Gail Gamache, Robert Rosenheck, and Richard Tessler, "The Proportion of Veterans among Homeless Men: A Decade Later," *Social Psychiatry and Psychiatric Epidemiology* 36, 10 (2001): 481–85; Gail Gamache, Robert Rosenheck, and Richard Tessler, "Overrepresentation of Women Veterans among Homeless Women," *American Journal of Public Health* 93, 7 (2003): 1132–36; Robert Rosenheck and Al Fontana, "A Model of Homelessness among Male Veterans of the Vietnam Generation," *American Journal of Psychiatry* 151, 3 (1994): 421–27; Robert Rosenheck, Catherine Leda, Linda Frisman, Julie Lam, and An-Me Chung, "Homeless Veterans," in *Homelessness in America*, ed. Jim Baumohl (Phoenix: Oryx, 1996), 97–108.

7. Adela Beckerman and Leonard Fontana, "Vietnam Veterans and the Criminal Justice System," *Criminal Justice and Behavior* 16, 4 (1989): 412–28; Boivin, "Forgotten Warriors"; Engendorf et al., *Legacies of Vietnam*; Levin and Ferrier, *Defending the Vietnam Combat Veteran*; Christopher Mumola, *Veterans in Prison or Jail, Bureau of Justice Statistics: Special Report* (Washington, DC: U.S. Department of Justice, Office of Justice Programs, 2000).

8. Boivin, "Forgotten Warriors"; James McGuire, Robert A. Rosenheck, and Wesley J. Kaspro, "Health Status, Service Use, and Costs among Veterans Receiving Outreach Services in Jail or Community Settings," *Psychiatric Services* 54, 2 (2003): 201–7; Bruce Pentland and James Dwyer, "Incarcerated Viet Nam Veterans," in *The Trauma of War: Stress and Recovery in Viet Nam Veterans*, ed. Stephen M. Sonnenberg, Arthur S. Blank, and John A. Talbott (Washington, DC: American Psychiatric Press, 1985), 403–16; Andrew J. Saxon, Tania M. Davis, Kevin L. Sloan, Katherine M. McKnight, Miles E. McFall, and Daniel R. Kivlahan, "Trauma Symptoms of Posttraumatic Stress Disorder, and Associated Problems among Incarcerated Veterans," *Psychiatric Services* 52, 7 (2001): 959–64; Donna M. Shaw, Cynthia M. Churchill, Russell Noyes, and Paul L. Loeffelholz, "Criminal Behavior and Post-Traumatic Stress Disorder in Vietnam Veterans," *Comprehensive Psychiatry* 28, 5 (1987): 403–11.

9. Saxon et al., "Trauma Symptoms"; Mumola, *Veterans in Prison or Jail*.

10. Boivin, "Forgotten Warriors"; Engendorf et al., *Legacies of Vietnam*.

11. Ghislaine Boulanger, "Violence and Vietnam Veterans," in *The Vietnam Veteran Redefined: Fact and Fiction*, ed. Ghislaine Boulanger and Charles Kadushin (Hillsdale, NJ: Lawrence Erlbaum, 1986), 79–90; Kulka et al., *Trauma and the Vietnam War Generation*; Engendorf et al., *Legacies of Vietnam*.

12. Alan Fontana and Robert A. Rosenheck, "The Role of War-Zone Trauma and PTSD in the Etiology of Antisocial Behavior," *Journal of Nervous and Mental Disease* 193, 3 (2005): 203–9.

13. Boivin, "Forgotten Warriors"; Bruce Pentland and Ray Scurfield, "Inreach Counseling and Advocacy with Veterans in Prison," *Federal Probation* 46, 1 (1982): 21–28.

14. Boivin, "Forgotten Warriors"; Engendorf et al., *Legacies of Vietnam*; Kulka et al., *Trauma and the Vietnam War Generation*; Starr, Henry, and Bonner, *Discarded Army*; Willard Waller, *The Veteran Comes Back* (New York: Dryden, 1944); Dixon Wector, *When Johnny Comes Marching Home* (Cambridge, MA: Riverside, 1944).

15. Boivin, "Forgotten Warriors"; Engendorf et al., *Legacies of Vietnam*; Pentland et al., "Inreach Counseling"; Waller, *The Veteran Comes Back*; Wector, *When Johnny Comes Marching Home*.

16. Card, *Lives after Vietnam*; Engendorf et al., *Legacies of Vietnam*; Kulka et al., *Trauma and the Vietnam War Generation*; Pentland et al., "Inreach Counseling."

17. Engendorf et al., *Legacies of Vietnam*; Pentland and Scurfield, "Inreach Counseling"; Starr, Henry, and Bonner, *Discarded Army*.

18. Boivin, "Forgotten Warriors"; Engendorf et al., *Legacies of Vietnam*; Arthur Engendorf, "The Postwar Healing of Vietnam Veterans: Recent Research," *Hospital and Community Psychiatry* 33, 11 (1982): 901-8; David R. Johnson, Hader Lubin, Robert Rosenheck, Alan Fontana, Steven Southwick, and Dennis Charney, "The Impact of the Homecoming Reception on the Development of Posttraumatic Stress Disorder: The West Haven Homecoming Stress Scale (WHHSS)," *Journal of Traumatic Stress* 10, 2 (1997): 259-77; Levin and Ferrier, *Defending the Vietnam Combat Veteran*; Pentland and Scurfield, "Inreach Counseling"; Starr, Henry, and Bonner, *Discarded Army*.

19. Starr et al., *Discarded Army*.

20. Card, *Lives after Vietnam*; Engendorf et al., *Legacies of Vietnam*.

21. Kulka et al., *Trauma and the Vietnam War Generation*.

22. Card, *Lives after Vietnam*.

23. Beckerman and Fontana, "Vietnam Veterans and the Criminal Justice System."

24. Mumola, *Veterans in Prison or Jail*.

25. Department of Justice, Bureau of Justice Statistics, *1997 Survey of Inmates in State and Federal Correctional Facilities* (Department of Justice, 2000), <http://www.icpsr.umich.edu/NACJD/home.html> (accessed January 10, 2005).

26. U.S. Census Department, *Census 2000 Long Form (Sample) Data; Special Tabulations Produced by the U.S. Census Bureau in Response to Data Requests Submitted by the Office of the Actuary, Department of Veterans Affairs* (U.S. Census Department, 2003), www.census.gov/housing/userdata (accessed January 10, 2005).

27. Department of Justice, Bureau of Justice Statistics, *1997 Survey of Inmates*.

28. *Ibid.*

29. Kenneth Rothman, *Modern Epidemiology*, 2nd ed. (Philadelphia: Lippincott-Raven, 1998).

30. Sue Berryman, *Who Serves? The Persistent Myth of the Underclass Army* (Boulder, CO: Westview, 1988); Morris Janowitz, "The All-volunteer Military as a Socio-political Problem," *Social Problems* 22 (February 1975): 432-49; Gwyn Harris-Jenkins and Charles C. Moskos, "Armed Forces and Society," *Current Sociology* 29, 3 (1981): 1-76.

31. Edwin Dorn, "Sustaining the All-Volunteer Forces," in *Professionals in the Front Line: Two Decades of the All Volunteer Force*, ed. J. Eric Fredland, Curtis Gilroy, Roger D. Little, and W. S. Sellman (London: Brassey's, 1996): 3-22; Mark Eitelberg, "The All-Volunteer Force after Twenty Years," in *Professionals in the Front Line: Two Decades of the All Volunteer Force*, ed. J. Eric Fredland, Curtis Gilroy, Roger D. Little, and W. S. Sellman (London: Brassey's, 1996): 66-98; Paul F. Hogan, Curtis J. Simon, and John T. Warner, "Sustaining the Force in an Era of Transformation," in *The All Volunteer Force: Thirty Years of Service*, ed. Barbara A. Bicksler, Curtis L. Gilroy, and John T. Warner (Washington, DC: Brassey's, 2004): 57-89; John P. White, "Reflections on Managing the All-Volunteer Force: Past and Future," in *The All Volunteer Force: Thirty Years of Service*, ed. Barbara A. Bicksler, Curtis L. Gilroy, and John T. Warner (Washington, DC: Brassey's, 2004): 33-44.

32. Richard V. Cooper, *Military Manpower and the All-Volunteer Force* (Santa Monica, CA: RAND, 1977); Chongsoo Kim, Gilbert Nestel, Robert L. Phillips, and Michael E. Borous, *National Longitudinal Survey of Youth Labor Market Experience: Military Studies* (Columbus, OH: Center for Human Resources Research, Ohio State University, 1980); *Population Representation in the Military Service: Fiscal Year 1989* (Washington DC: Office of the Secretary of Defense, 1990).

33. Eitelberg, "The All-Volunteer Force"; Mark J. Eitelberg, Janice H. Laurence, Brian K. Waters, and Linda S. Perlman, *Screening for Service: Aptitude and Education Criteria for Military Entry*

(Washington, DC: Office of the Assistant Secretary of Defense, 1984); Janice Laurence, Peter F. Ramsberger, and Monica Gribben, *Effects of Military Experience on the Post-service Lives of Low-Aptitude Recruits: Project 100,000 and the ASVAB Misnorming* (Alexandria, VA: Human Resources Research Organization, 1989).

34. Eitelberg, "The All-Volunteer Force."

35. Don Cahalan, Ian A. Cisin, G. L. Gardner, and G. C. Smith, *Drinking Practices and Problems in the U.S. Army* (Washington, DC: U.S. Department of the Army, 1972); Robert M. Bray, M. A. Marsden, M. A., L. L. Guess, S. C. Wheelless, and D. K. Pate, *1985 Worldwide Survey of Alcohol and Nonmedical Drug Use among Military Personnel* (Research Triangle Park, NC: Research Triangle Institute, 1986); John M. Polich, "Epidemiology of Alcohol Abuse in Military and Civilian Populations," *American Journal of Public Health* 71, 10 (1981): 1125-32.

36. Robert Rosenheck, Linda Frisman, and An-Me Chung. "The Proportion of Veterans among Homeless Men," *American Journal of Public Health* 84, 3 (1984): 466-69.

37. Rosenheck, Frisman, and Chung, "The Proportion of Veterans."

38. Kulka et al., *Trauma and the Vietnam War Generation*.

39. Engendorf et al., *Legacies of Vietnam*.

40. Ibid.

41. Ibid.

42. Ibid.

43. Ibid.

44. Ibid.

45. Richard T. Cooney, Mady W. Segal, David R. Segal, and William W. Falk, "Racial Differences in the Impact of Military Service on the Socioeconomic Status of Women Veterans," *Armed Forces & Society* 30, 1 (2003): 53-75; Robert L. Phillips, Paul J. Andrisani, Thomas N. Daymont, and Curtis L. Gilroy, "The Economic Returns to Military Service: Race-Ethnic Differences," *Social Science Quarterly* 73, 2 (1992): 340-59; Aline Q. Quester and Curtis L. Gilroy, "Women and Minorities in America's Volunteer Military," *Contemporary Economic Policy* 20, 2 (2002): 111-21.

46. Cooney et al., "Racial Differences"; Phillips et al., "The Economic Returns to Military Service"; Jay Treachman and Lucky M. Tedrowm, "Wages, Earnings, and Occupational Status: Did World War II Veterans Receive a Premium?," *Social Science Research* 33, 4 (2004): 581-605.

47. Richard Fernandez, "Social Representation in the Military: A Reassessment," in *Professionals on the Front Line: Two Decades of the All-Volunteer Force*, ed. J. Eric Fredland, Curtis Gilroy, Roger Little, and W. S. Sellman (London: Brassey's, 1996): 226-45.

48. Office of the Assistant Secretary of Defense for Personnel and Readiness, *The Population Representation in the Military Services* (Washington, DC: Office of the Assistant Secretary of Defense for Personnel and Readiness, 2004).

49. Dorn, "Sustaining the All-Volunteer Forces"; Eitelberg, "The All-Volunteer Force after Twenty Years," 66-98; Hogan, Simon, and Warner, "Sustaining the Force," 57-89; John P. White, "Reflections on Managing the All-Volunteer Force: Past and Future," in *The All-Volunteer Force: Thirty Years of Service*, ed. Barbara A. Bicksler, Curtis Gilroy, and John Warner (Washington, DC: Brassey's, 2004): 33-44; Office of the Assistant Secretary of Defense for Personnel and Readiness, *The Population Representation in the Military Services*.

50. Jerald Bachman, Peter Freedman-Doan, Patrick O'Malley, Lloyd Johnston, and David Segal, "Changing Patterns of Drug Use among U.S. Military Recruits before and after Enlistment," *American Journal of Public Health* 89, 5 (1999): 672-77.

51. Dorn, "Sustaining the All-Volunteer Forces"; Eitelberg, "The All-Volunteer Force after Twenty Years"; Fernandez, "Social Representation in the Military"; Hogan, Simon, and Warner, "Sustaining the Force"; Office of the Assistant Secretary of Defense for Personnel and Readiness, *The Population Representation in the Military Services*.

52. Beckerman and Fontana, "Vietnam Veterans and the Criminal Justice System."

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