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# Mortality Risk and Factors Influencing Death in Older Homeless Veterans

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# Introduction

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- Numerous studies describe the health problems experienced by the homeless as a result of:
  - exposure to environmental toxins and communicable diseases
  - poor health care
  - chronic stressors such as low SES, malnutrition, and psychiatric and substance use disorders
- These stressors are associated with chronic disorders, such as hepatitis and cardiovascular disease, and, as a result, substantial risk of early death.



# Introduction

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- The few extant studies of homeless veterans do suggest that homelessness is associated with early mortality, even after adjustments were made for the presence of other variables (e.g., mental illness) known to contribute to early death.
- These estimates may be biased, however, given that the study samples consisted of veterans who either were identified in records of medical care or were enrolled in general medical or psychiatric treatment programs.



# Introduction

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- Age is a potent factor for study among veterans who are homeless. Twenty percent of those who enter VA homelessness programs are age 55 or older, many with health problems and reported high rates of nonfatal suicidal behavior.
- In our research we examined mortality patterns in a large sample of older veterans identified solely by their entry into national VA homelessness programs.



# Sample and Data Source

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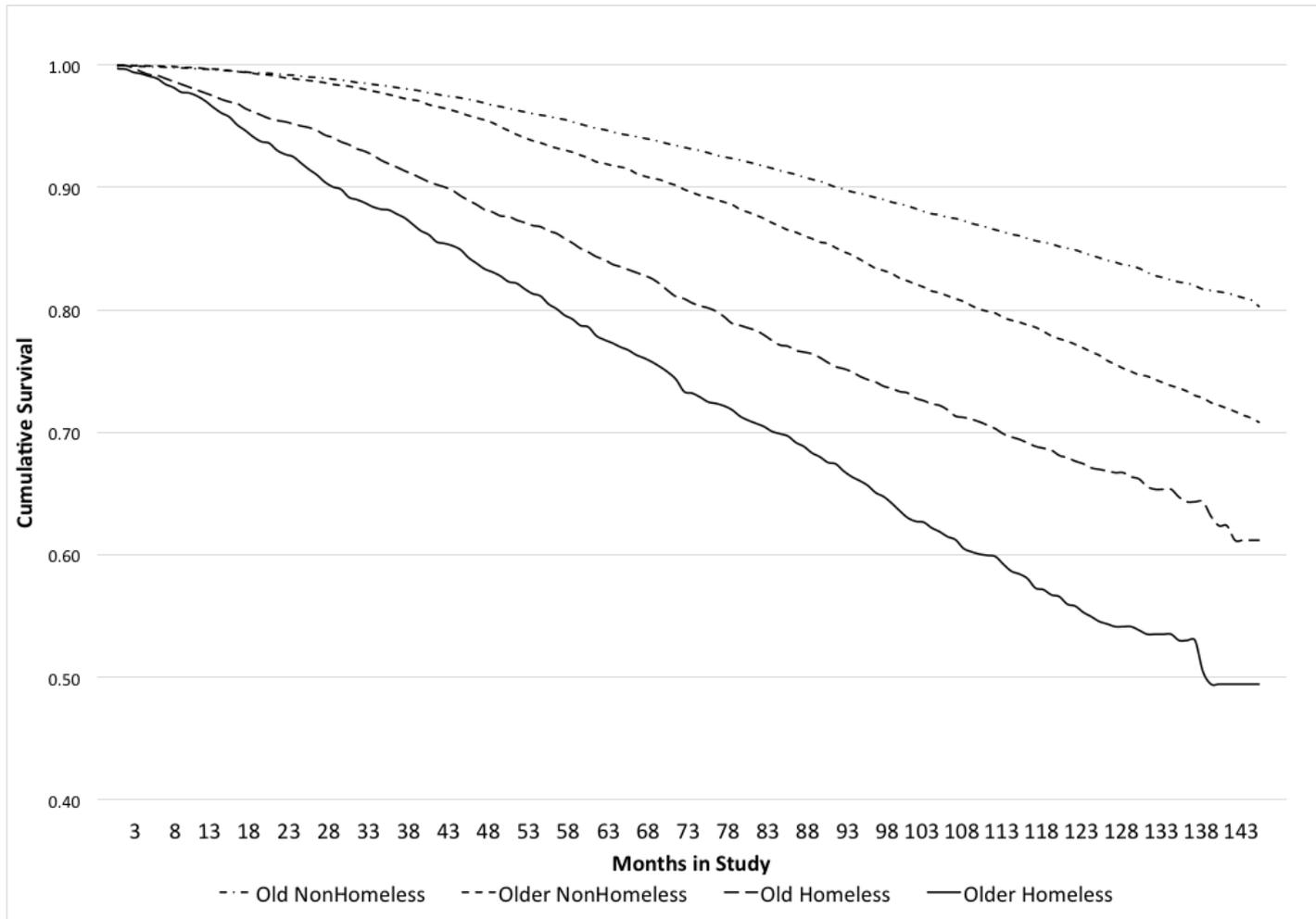
- We examined administrative data for the 4,775 veterans ages 55+ admitted into VA homelessness programs in 2000–2003.
- A control group was created by using administrative records from the CDW to identify 20,071 veterans age 55+ who received medical care from the VA in 2000–2003.
- CDC National Death Index records were searched through 2011 to ascertain death.

# Analyses/Results

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- During the follow-up period 2000-2011, 1,560 (35%) homeless veterans died from all causes, compared with a significantly smaller proportion (N=3,649, 18%) of the control sample ( $p < .001$ ).
- However, when we looked at the impact of increasing age (55-59 vs 60+), these differences were magnified.
  - Old veteran, 15% deceased
  - Older veteran, 24% deceased
  - Old homeless veteran, 31% deceased
  - Older homeless veteran, 43 % deceased

# Analyses/Results



# Analyses/Results

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- Eleven specific causes of death accounted for 95% of veterans in both samples.
- The most frequent causes were cardiovascular diseases (homeless, 33%; control, 31%), neoplasms (homeless, 23%; control, 30%), and respiratory diseases (homeless, 10%; control, 11%).
- Death by suicide was rare, but odds of dying by suicide were greater in homeless veterans (N=18, .4%) than controls (N=41, .2%) ( $p < .001$  ).



# Analyses/Results

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- In another set of analyses, we examined predictors of death in a subsample of 3,620 homeless veterans for whom there was Form X data.
- Form X: structured interview that captures information in several domains (e.g., sociodemographic, psychosocial, health, housing, alcohol abuse, employment ).
- Fifteen Form X variables were used to describe the sample and serve as predictors of survival.

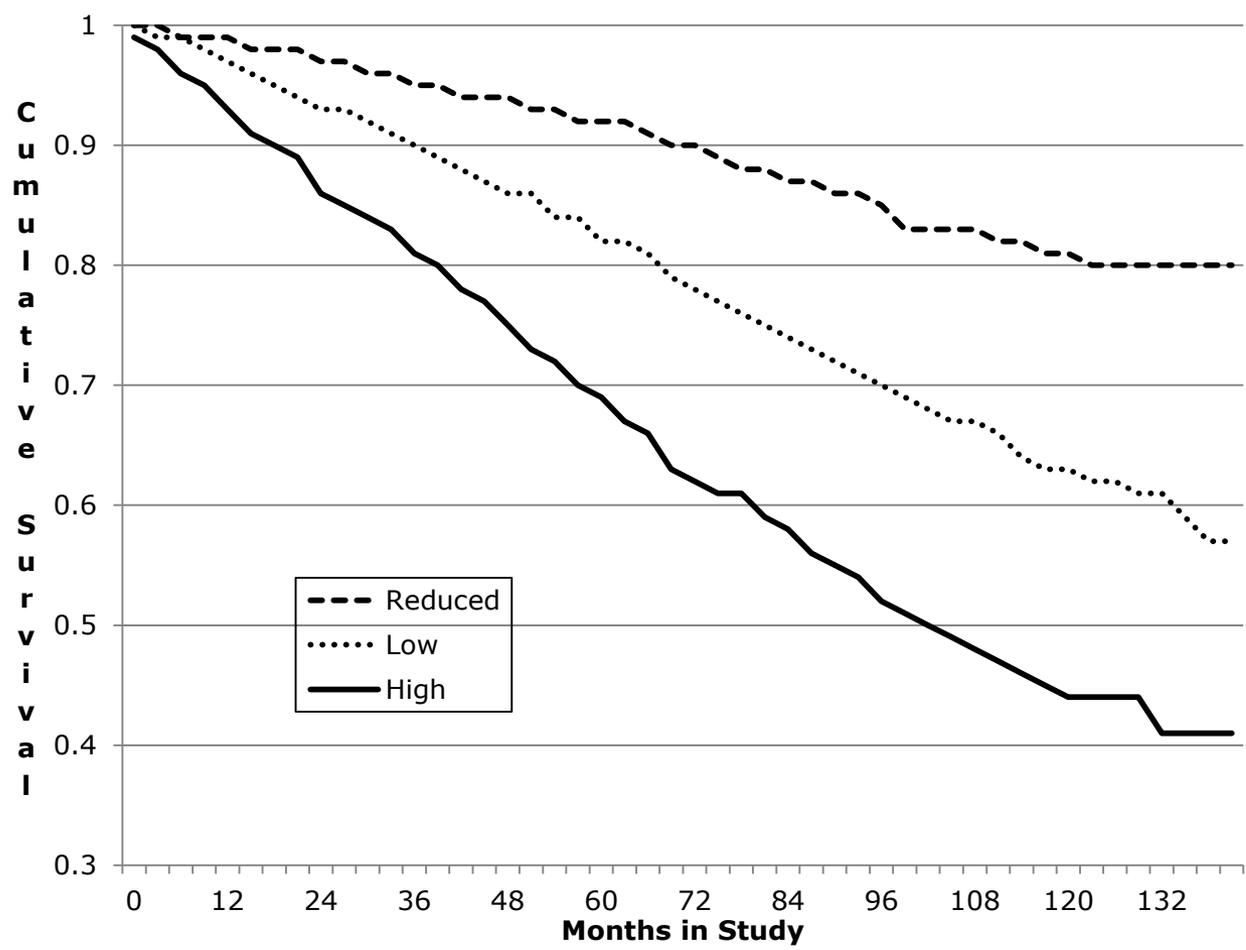


# Analyses/Results

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- Five variables (serious medical problem, hospitalization for alcohol abuse, alcohol dependency, unemployment for three years, and age 60+) were modestly associated with increased risk of death.
- Three (non-White, drug dependency, dental problems) were modestly associated with reduced risk.
- A risk score, based on all eight predictors, was used to identify three groups that were found to differ significantly in mortality.

# Analyses/Results





# Discussion

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Our research provides support for the hypothesis that homelessness increases mortality rates in older veterans, especially in those age 60+.

While there are several predictors of early mortality for older homeless veterans, the combination of predictors as an overall risk index may have potential to identify those veterans at greatest risk.



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