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Research paper

The relationship between childhood poverty, military service, and later life depression among men: Evidence from the Health and Retirement Study

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ABSTRACT

Background: Childhood poverty has been associated with depression in adulthood, but whether this relationship extends to later life major depression (MD) or is modified by military service is unclear.
Methods: Data come from the Health and Retirement Study (HRS) 2010 wave, a longitudinal, nationally representative study of older adults. Men with data on military service and childhood poverty were included (N=6330). Childhood poverty was assessed by four indicators (i.e., parental unemployment, residential instability) experienced before age 16. Military service was categorized as veteran versus civilian, and during draft versus all-volunteer (after 1973) eras. Past year MD was defined by the Composite International Diagnostic Inventory.
Results: Four in ten men ever served, with 13.7% in the all-volunteer military. Approximately 12% of civilians, 8% draft era and 24% all-volunteer era veterans had MD. Childhood poverty was associated with higher odds of MD (Odds Ratio (OR): 2.38, 95% Confidence Interval (CI): 1.32–4.32) and higher odds of military service (OR: 2.58, 95% CI: 1.58–4.21). Military service was marginally associated with MD (OR: 1.28, 95% CI: 0.98–1.68) and did not moderate the association between childhood poverty and MD.
Limitations: Self-report data is subject to recall bias. The HRS did not assess childhood physical and emotional abuse, or military combat exposure.
Conclusions: Men raised in poverty had greater odds of draft and all-volunteer military service. Early-life experiences, independent of military service, appear associated with greater odds of MD. Assessing childhood poverty in service members may identify risk for depression in later life.

1. Introduction

Major Depression (MD) is the most common psychiatric disorder among middle-age and older adults, affecting between 15% and 20% of this population (Aldrich, 2016; Diefenbach and Goethe, 2006). MD is associated with premature mortality from lack of self-care, diminished functioning, and suicide (Fiske et al., 2009). There is a growing body of research that indicates mental health in middle age and later-life is influenced by exposures experienced much earlier in the life course, including in childhood. For example, adverse childhood experiences (ACEs), such as experiencing neglect and abuse, are associated with MD in adults across the lifespan (Culpin et al., 2015). Even less severe exposures such the experience of poverty early in life have been associated with depression in older adults (Johnson et al., 1999).

Childhood poverty is also associated with entrance into military service. Prior research indicates that individuals who experienced poverty and other ACEs in childhood are more likely to enroll in military service (at least in the all-volunteer era (Segal et al., 1998)), with Blosnich et al. (2014) hypothesizing "that the military may serve as a route for a subset of persons to escape dysfunctional home environments, at least among men." (p. E4). It is also notable that the racial make-up of the military has changed substantially over time, becoming more racially-diverse in recent decades (2014 Demographics: Profile of the Military Community, 2014; Barnes et al., 2013). Thus, military service may provide a pathway out of poverty, ultimately altering individuals' mental and physical health trajectories (Chatterjee et al., 2009).

However, military service also puts individuals at risk of exposure to combat and other types of trauma, exposures that have established negative relationships with MD and other forms of psychopathology in later life (Cabrera et al., 2007; Conner et al., 2014; Hoge et al., 2004). For example, studies of identical twins

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who both served in the military during the Vietnam War have shown combat exposure is associated with later risk of post-traumatic stress disorder many years after service ends (Goldberg et al., 1990; Koenen et al., 2002). In sum, the long term implications of childhood poverty and military service on MD is poorly understood. Extant studies have been limited in scope (i.e., use of non-representative samples; have not examined specific elements of military service history; have relied on non-specific measures of psychological distress) (Blosnich et al., 2014; Montgomery et al., 2013).

The goal of this study is to examine the relationships between childhood poverty and military service with MD in a nationally-representative sample of older men using data from the Health and Retirement Study. The objectives of this analysis are to: 1) Examine the relationship between childhood poverty and MD; 2) Examine the relationship between military service and MD; and 3) Assess whether the relationship between childhood poverty and MD is mediated or moderated by history of military service among men. We hypothesized that the relationship between childhood poverty and MD would be partially mediated by history of military service. If that is the case then the relationship between childhood poverty and MD will be reduced, but still significant after controlling for history of military service.

2. Methods

2.1. Sample

Data come from the 2010 Wave of the Health and Retirement Study (HRS). The HRS is an ongoing, longitudinal, nationally-representative multistage area probability sample of adults over age 50 with a steady-state sample size of approximately 20,000 individuals. It includes oversampling of African Americans, Hispanics and Floridians. Institutionalized individuals are initially excluded from the study, but participants are followed when they move from the household population into institutions. The cohort is re-interviewed every two years, and is refreshed every six years with an additional younger age group (over age 50) to keep the HRS representative of the aging US population, most recently in 2010. Starting in 2008, all HRS respondents were assessed for past-year MD using the Composite International Diagnostic Inventory Short Form (CIDI-SF) Depression Module (Kessler et al., 1998). The response and follow-up rates for the HRS range from 85% to 95% (Health and Retirement Study: Sample sizes and response rates, 2011). The 2010 respondent weights used in these analyses excludes individuals who were residing in nursing homes and corrects for attrition due to death or non-response. Importantly, health status and indicators of socioeconomic status (educational attainment, wealth) are not significant predictors of attrition in the HRS (Banks et al., 2011). Further details of the HRS design and methods can be found elsewhere (Growing older in America: The Health and Retirement Study, 2007; Health and Retirement Study: Sample sizes and response rates, 2011).

The analytic sample for this study was restricted to men who had complete data from the 2010 CIDI-SF MD module, childhood poverty measures, and military service history, including years of entrance or exit from the military for those who served. Individuals missing data on at least one of the childhood poverty measures were excluded from the analysis using listwise deletion (N = 1722 excluded who had information on all other measures used in this study (i.e., depression, military service)). Only men were included because few women in this cohort had served in the military, and none served in combat.

The HRS is approved by the Institutional Review Board at the University of Michigan and all respondents provided informed consent. This analysis is exempt because the data are publicly available.

2.2. Measures

2.2.1. Outcome: major depression

Past year MD was assessed by the CIDI-SF administered to all respondents in 2010. The CIDI-SF is a fully-structured diagnostic interview that operationalizes the diagnostic criteria of the Diagnostic and Statistical Manual of Mental Disorders Fourth Edition Text Revision (DSM-IV-TR (Diagnostic and statistical manual of mental disorders, 2000)). The CIDI-SF is administered by trained lay interviewers, and has moderate concordance with clinical interviews (Kessler et al., 1998).

2.2.2. Exposure: childhood poverty

Childhood poverty was defined by four self-report variables asking about the respondents' families when they were growing up (specified as up to age 16): 1) "Would you say your family during that time was pretty well off financially, about average, or poor?" The four possible responses were dichotomized as Poor (including "Poor" and "It varied") and Not Poor (including "Pretty well off financially" and "About Average"); 2) "Did financial difficulties ever cause you or your family to move to a different place?" which was recorded as a dichotomous variable (yes/no); 3) "Was there a time when you or your family received help from relatives because of financial difficulties?" which was also recorded dichotomously as yes/no; and 4) "Was there a time of several months or more when your father had no job?" which was also dichotomously recorded as yes/no. These four variables were examined as independent predictors as well as a count (ranging from 0 to 4) of the number of childhood poverty indicators experienced.

2.2.3. Potential mediator: military service

Military service was defined using three variables indicating history of military service and dates of entry and exit from the military. The primary variable was a dichotomous indicator of whether the respondent had ever served in the "active military" (yes/no). Dates of entry and exit from the military were used to determine whether the respondent entered the military in the draft-era (prior to 1973) or all-volunteer era (1973 to present). Previous studies have found that poverty is associated with entrance into the all-volunteer military (Blosnich et al., 2014). Therefore, these latter two variables were used as part of a sensitivity analysis to examine whether the relationship between childhood poverty and military service varied during these different service eras in this sample.

2.2.4. Other characteristics

Demographic characteristics included age (in years), race/ethnicity (categorized as White, African American, and Hispanic/Other), education (categorized as less than high school, high school, some college, and college graduate or more) and marital status (categorized as currently married/partnered; formerly married, including separated, divorced, and widowed; and never married).

Finally, because screening procedures often preclude individuals with a history of psychopathology from military service (Jones et al., 2003), as an exploratory sensitivity analysis we analyzed self-reported history of childhood mental illness, indicated by history of depression, drug or alcohol problems, and any other emotional/psychological problems prior to age 16, as a covariate in the descriptive analyses.