National Poverty Center Working Paper Series

#11 – 11

April 2011

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This paper is available online at the National Poverty Center Working Paper Series index at:
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This project was supported by the National Poverty Center (NPC) using funds received from the
U.S. Census Bureau, Housing and Household Economics Statistics Division through contract
number 50YABC266059/TO002. The opinions and conclusions expressed herein are solely those
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VETERAN STATUS AND MATERIAL HARDSHIP:
THE MODERATING INFLUENCE OF DISABILITY*

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* This research was supported by a Survey of Program Participation (SIPP) Analytic Research Small Grant from the National Poverty Center, Gerald R. Ford School of Public Policy, University of Michigan (Co-PIs: Colleen M. Heflin, Andrew S. London, and Janet M. Wilmoth). Additional support was provided by a grant from the National Institute on Aging, –Military Service and Health Outcomes in Later Life‖ (1 R01 AG028480-01) (PI: Janet M. Wilmoth).
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ABSTRACT

Veterans are a sizeable and policy-relevant demographic group in the United States, yet very little is known about their economic well-being. While having a work-limiting disability is known to be associated with material hardship, no study of which we are aware has focused on experiences of material hardship among veteran households in contrast to comparable nonveteran households, or on whether work-limiting disability moderates the association between veteran status and material hardship. We use the Survey of Income and Program Participation (SIPP) to examine variation in the likelihood of household material hardship by veteran and disability statuses. Results indicate that: non-disabled veteran households report lower or equivalent levels of material hardship than households with no veteran or person with disability; households that include a person with a disability, regardless of whether a veteran is present, have higher levels of every type of hardship; and disabled veteran households experience significantly more hardship than non-disabled veteran households.
**Introduction**

Veteran households constitute a sizeable and policy-relevant demographic group in the United States, yet very little is known about their economic well-being (Burland and Lundquist forthcoming; U.S. Census Bureau 2009). This is surprising given that emerging research documents that veteran status is associated with higher rates of functional limitation and disability (Dobkin and Shabani 2009; MacLean 2010; Wilmoth, London, and Parker 2010; Wilmoth, London, and Parker *forthcoming*) and it is well-known that having a work-limiting disability is associated with increased poverty and material hardship (Fujiura, Yamaki, and Czechowicz 1998; Jencks and Mayer 1989; She and Livermore 2007; Rose, Parish and Yoo 2009). In fact, one of two overarching themes that emerged from the analysis of key informant interviews with disability advocacy and research leaders was the impact of poverty among people with disabilities (O’Day and Goldstein 2005); however, none of the these key informants specifically mentioned addressing the needs of disabled veterans as one of their top priorities.

Few studies of disability and economic hardship include veteran status. One recent study documents that disabled veteran status has a large and negative effect on income relative to persons without disabilities and nonveterans with disabilities (Fulton, Belote, Brooks, and Coppola 2009), while another recent study demonstrates that household members’ veteran and work-limiting disability statuses are jointly associated with household poverty status (London, Heflin, and Wilmoth *in review*). Poverty and various material hardships are conceptually distinct and only modestly correlated (Mayer and Jencks 1989, 1993; Mayer 1995; Beverly 2000; Boushey et al. 2001; Perry 2002; Bradshaw and Finch 2003; Heflin, Sandberg, and Rafail 2009), and researchers are increasingly focusing attention on studying the experience of material hardship net of household income (Iceland and Bauman 2004; Heflin and Iceland 2009; She and
Livermore 2007). No study of which we are aware has focused on experiences of material hardship among veteran and comparable nonveteran households, or whether the veteran and work-limiting disability statuses of adult household members are jointly associated with household-level material hardship. This is a surprising omission in the literature given that veterans are eligible for an array of cash and non-cash Veterans Administration benefits and services, many of which are tied to service-related disability (Wilmoth and London forthcoming). Given this, households that contain veterans may have lower levels of material hardship than comparable nonveteran households, regardless of their own or other adult household members’ work-limiting disability statuses.

In this paper, we use pooled data from five waves of the Survey of Income and Program Participation (SIPP) to examine variation in the likelihood of household-level material hardship by veteran and disability statuses. Specifically, we use data from the 1992, 1993, 1996, 2001, and 2004 SIPP to examine the extent to which adult household members’ veteran and work-limiting disability statuses are associated with the odds of experiencing four types of material hardship—home hardship, medical hardship, bill-paying hardship, and food insufficiency—taking into account household income-to-needs and various household-level demographic characteristics. Results indicate that veteran households report lower levels of material hardship than nonveteran households, but that the advantage associated with prior military service is consistently and substantially reduced for households that include a disabled veteran or a disabled nonveteran.

**Relevant Literature**

*The well-being of veterans in the United States*
In 2009, over 21.9 million Americans were veterans, representing approximately 9.5% of those aged 18 years or older (U.S. Census Bureau, 2009). Military service is particularly prevalent among older cohorts of men who served in World War II and the Korean War; in 2000, almost 9.2 million men age 65 years and older were veterans, which represented 64% of men in that age group (Interagency Forum on Aging-Related Statistics 2008). However, participation in the military has increased substantially among women in recent years, from 1.6% of military personnel in 1973, when the era of the All-Volunteer Force (AVF) began, to 14.6% in 2005 (U.S. Department of Defense 2007; Women's Research and Education Institute 1990). Now, over 7% of veterans are women (U.S. Census Bureau 2007; Congressional Budget Office 2007).

The effect of military service on subsequent human capital development and socioeconomic attainment has received sustained attention in the literature (Bennett and McDonald forthcoming; Kleykamp forthcoming; MacLean and Elder 2007). These studies pay close attention to different historical and policy periods and provide insight into the possible complexity of the relationship between military service and material well-being. There is considerable evidence that large numbers of veterans of World War II were able to take advantage of the generous G.I. Bill benefits that were available to them to enhance their educational attainments over what they would have been in the absence of military service (Bound and Turner 2002; Mettler 2005). While women and black male veterans, especially those born in the South (Turner and Bound 2003), were less likely than white male veterans to use these G.I. Bill benefits, it is clear that the post-World War II G.I. Bill significantly increased training and college attendance among the many veterans who took advantage of its generous benefits.
Yet researchers who have focused on the effect of military service and the use of benefits on educational outcomes in other periods find that veterans from the Cold War (MacLean 2005), the Vietnam Era (Teachman and Call 1996; Teachman 2004, 2005), and the AVF era (Teachman 2007) have lower educational attainments than nonveterans, although these effects vary by branch of service and various characteristics of veterans. The lower educational attainment among these veterans relative to nonveterans might be due to increases in educational attainment in the nonveteran population, changes in the availability of G.I. Bill benefits, and declines in the value of such benefits during the latter half of the twentieth century.

Other research focuses on occupational and income components of socioeconomic attainment and again provides evidence of mixed effects depending upon individual and historical specificities. Compared to nonveterans, studies suggest that veterans from World War II did not experience higher earnings or substantial occupational gains, with one exception: officers were able to convert their service into post-war occupational advancement (Angrist and Krueger 1994: Dechter and Elder 2004). Studies focusing mostly on Vietnam-era veterans suggest that military service in a war zone and combat exposure led to worse labor market experiences and lower earnings (Angrist 1990). The lower earnings of Vietnam-era veterans may in part be attributable to post-traumatic stress disorder and other psychiatric disorders that are more prevalent among such veterans (Savoca and Rosenheck 2002). There is also evidence that military service decreased accumulated net worth significantly relative to that of nonveterans, although the magnitude of this effect varies with length of service (Fitzgerald 2006).

In contrast, some studies have demonstrated positive effects of military service on socioeconomic outcomes. Compared to nonveterans, earnings were higher for African American
and other non-White veterans who served in World War II (Teachman and Tedrow 2004) and during the AVF era (Angrist 1998), which provides evidence of a positive turning point in the earnings trajectories of initially-disadvantaged men (see also Xie 1992). In addition, men from disadvantaged backgrounds who served during the AVF era earned more than their civilian counterparts; however, this premium dissipated after discharge (Teachman and Tedrow 2007).

Although researchers have paid a substantial amount of attention to questions related to whether, how, and for whom military service affects human capital development and socioeconomic attainment, no study of which we are aware has specifically focused on comparing material hardship outcomes among veterans and nonveterans. Perhaps this is partly because it is assumed that military personnel are unlikely to experience material hardships as a result of their eligibility for and use of Veterans Administration benefits and services, which enhance human capital development and directly subsidize housing, health care, and income through the direct distribution of cash and non-cash resources. Yet, evidence from the 1% sample of the 2000 U.S. Census indicates that a substantial percentage of veterans live in poverty, even though they are less likely than nonveterans to do so; in 2000, 8.4% of veterans lived in poverty, and women veterans were substantially more likely than male veterans to do so (14.1% versus 7.6%, respectively) (London and Wilmoth 2008). In an analysis based on SIPP data, London, Heflin, and Wilmoth (in review) found that households with non-disabled veterans present are less like to be in poverty than non-disabled nonveteran households, but the advantage is eroded when the veteran is disabled or has a disabled adult family member. This suggests veteran status interacts with disability status in ways that could also affect material hardship. Additionally, it is likely that a substantial additional percentage of the veteran population live near poverty, which puts them at increased risk for material hardship as well. Even though a
substantial number of veterans live in or near poverty, their experiences of material hardship may be different than those of nonveterans given that veterans have access to benefits and services to which nonveterans do not have access.¹

**Disability status as a modifier for veteran status**

While selection into military service and the –treatment effect of military service itself may alter the risk of material hardship, an additional factor is that veterans are more likely to be disabled than nonveterans (Dobkin and Shabani 2009; MacLean 2010; Wilmoth, London, and Parker 2010, forthcoming). Although military personnel are initially selected on good health and functioning (National Research Council 2006), military service carries a risk of injury and exposure to circumstances, such as combat, training-related accidents, interpersonal violence, substance abuse, and stress-related mental health problems that increase the likelihood of having a functional limitation or disability (Bedard and Deschênes 2006; Clipp and Elder 1996; Dobkin and Shabani 2009; Elder and Clipp 1988; Elder and Clipp 1989; MacLean 2010). These service-related risks are unique to military service and may therefore distinguish veteran households from nonveteran households, as well as households that include veterans with and without disabilities.

Additionally, serving in the military can under some circumstances create disruption in the life course by interfering with established marital, parenting, and occupational trajectories.

¹ Veterans may also have different access to networks of family and community support than nonveterans, which may differentially mitigate some material hardship. See Heflin, London, and Scott (forthcoming) for a discussion of the distinctive and varying role of social network support in mitigating different types of material hardships among welfare-reliant and working poor urban women.)
(Elder, Shanahan, and Clipp 1994; Teachman, Call, and Wechsler 1993; Tsend, Sambamoorthi, Tiwari, Rajan, Findley, and Pogach 2006). Although there is variation by gender, race/ethnicity, social class origins, active duty status, rank, combat exposure, and historical period, there is some evidence that veterans have higher rates of divorce than nonveterans (Burland and Lundquist forthcoming; London, Allen, and Wilmoth in review). To the extent that it exists, interference and instability in marriage and life course trajectories might reduce access to social and economic resources or contribute to less healthy lifestyles that ultimately increase the risk of functional limitation or disability among veterans.

Recent research using the 5% sample of the U.S. Census documents that the highest rates of functional limitation and disability among both men and women are observed among veterans, with lower rates among those who never served in the military and the lowest rates among active-duty personnel (Wilmoth, London, and Parker forthcoming). Similarly, MacLean (2010) uses data from the Panel Study of Income Dynamics (PSID) and shows that combat veterans were somewhat more likely than nonveterans and much more likely than non-combat veterans to have a work-limiting disability during the prime working ages of 25 to 55 years.

Other research indicates that early health advantages may erode as veterans grow older. Dobkin and Shabani (2009) use pooled data from the National Health Interview Survey and find that initial differences in work-limiting disability between veterans and nonveterans are small, and thus are not likely to be related to military service, but, as they age, the differences between veterans and nonveterans increase. By the time the cohort is in their late 40s and early 50s, veterans have a significantly higher level work limitation relative to nonveterans in an instrumental variable model that controls for un-observed selection effects. Similarly, Wilmoth, London, and Parker (2010) use data from the Health and Retirement Study and report that
military service is associated with better health around retirement age, but greater age-related declines in health and functioning.

Previous research has demonstrated that poor health or the presence of a work-limiting disability increases the risk of material hardship (Mayer and Jencks 1989; Bauman 1998; Corcoran et al. 1999; Heflin et al. 2007; She and Livermore 2007; Parish, Rose and Andrews 2009). In the study closest to our own, She and Livermore (2007) use the 1996 panel of the Survey of Income and Program Participation to demonstrate that, after controlling for basic demographic controls and current income, those with work-limiting disabilities are more likely to report food insecurity, that they did not meet basic expenses, that they did not pay their rent or mortgage, that they did not pay their utility bills, and that they did not receive needed medical and dental care. Additionally, She and Livermore estimate that individuals with some type of disability compose a large share of the population reporting material hardship, 49-62 percent depending on the hardship domain.

The increased risk of material hardships among households that contain a person with a disability are likely due to the limited employment of the disabled household member. But, it is also important to acknowledge that the care work performed by the nondisabled household members can impede labor force participation and suppress household income (Cancian and Oliker 2000; Pavalko and Henderson 2006). This issue is particularly salient among veteran households, where care work often becomes a long-term commitment due to the debilitating nature of some combat-related injuries (Resnik and Allen 2007). A recent study found that the majority of caregivers for wounded veterans experience relatively long spells of intense care work; this group spent about 10 hours per week for an average of 19 months providing care and 43% expected to continue providing long-term care (Christensen et al. 2009). Such care work
demands contribute to losses in time spent in paid employment, which could increase the risk of material hardship.

While it is clear that the presence of a disability substantially increases the risk of material hardship, previous research has largely treated the disabled population as homogenous. At most, some (She and Livermore 2007) control for the length of current disability in order to distinguish short-term from long-term disability. However, their analyses suggest that both short-term and long-term disabilities are associated with similar increases in the risk of hardship. Current research efforts have failed to consider how differences in the nature and severity of the disability, the trajectory of disablement, and the package of benefits and services available between veterans and nonveterans might result in differential risks of material hardship among veterans and nonveterans who are disabled.

Provisions from the Department of Veterans Affairs most directly aim to address service-related needs. These provisions try to mitigate some of the disruption that military service can cause, compensate and care for persons who have been harmed in the course of their service, as well as their dependents, and generally reward those who have taken risks and made personal sacrifices of various kinds in service to their country. VA benefits and services address the needs of veterans from two approaches. Some benefits work in tandem with social insurance programs, such as Social Security and Medicare (Goodman and Stapleton 2007). Other aspects of these VA benefits and services are designed to accommodate the unique needs of specific subgroups of veterans, such as veterans with service-connected PTSD and disabilities, veterans from specific wars, and other veterans with unique service-related experiences.

Over time, provisions for veterans have expanded, but the basic types of provisions have remained the same since WWII. Currently, there are nine main categories of VA benefits and
services: health care; service-connected disability compensation; pensions; education and training; home loan guaranty; life insurance; burial and memorial benefits; transition assistance, including vocational rehabilitation and employment; and dependent and survivors benefits (U.S. Department of Veterans Affairs 2009b). To qualify for VA benefits, the service member must have been other than dishonorably discharged from full-time active duty service, and in some cases must have served during wartime. Members of Reserve and National Guard qualify for these benefits under certain conditions. Special provisions are made for other historically-relevant groups (U.S. Department of Veterans Affairs 2009c). Veterans with service-connected disabilities are given priority in access to benefits and premiums in resource allocations depending on the level of their disability rating, which can range from 0 to 100 percent and is determined by the VA (Wilmoth and London forthcoming)

Given the linkages between military service and benefits, military service and disability, and disability and hardship, respectively, the lack of attention to how material hardship varies in relation to veteran status and whether households that include disabled veterans experience less material hardship than comparable households that include disabled nonveterans represents an important gap in the literature that this research aims to address.

METHODS

Sample and Procedures

To examine the relationship between veteran and disability statuses and each of four distinct types of material hardship, this research uses data from the 1992 to 2004 panels of the Survey of Income and Program Participation (SIPP), a nationally representative household survey conducted in the United States by the U.S. Census Bureau. We use the eighth wave of the 2004 SIPP panel collected in June through September 2005; the eighth wave of the 2001 SIPP panel collected in June through September 2003; the eighth wave of the 1996 SIPP panel
collected in August through November 1998; the ninth wave of the 1993 SIPP panel collected in
October 1995 through January 1996; and the third wave of the 1992 panel collected in October
1992 through January 1993. Each interview in the panel consists of a core interview, with
standard questions on demographics, labor force participation, and income, and a topical module
interview, with questions on topics that change from one interview (wave) to the next.
Interviews (waves) are conducted every four months. When survey weights are used, results
from analyses of SIPP data are representative of the civilian (nonveteran and veteran), non-
institutionalized population of the United States. Imputed data are used as provided.

While veteran and disability status are measured at the individual-level, material hardship is a
household-level indicator. Individual-level analysis is likely to understate the relationship
between veteran and disabled status and material hardship because many nonveteran and able-
bodied individuals share households with veterans and the disabled. As a result, we present all
our analyses at the household level.

Measures

Based upon the measurement principles developed the 2004 United States Department of
Health and Human Services Roundtable on Measuring Material Hardship (Oullette 2004) and by
Beverly (2001), we develop models of material hardship based upon four domains of material
need—home, medical, bill-paying, and food hardship—by utilizing a number of dichotomous
indicators from the SIPP instrument designed for this purpose. Home hardship indicates
whether, in the prior 12 months, the household had a problem with pests, a leaky roof or ceiling,
broken windows, plumbing problems, or cracks in the walls, floor, or ceiling. Medical hardship
indicates that a household member was not able to see a doctor or a dentist when they needed to
in the last 12 months. Bill-paying hardship indicates whether, in the prior 12 months, the
household was ever behind on utility payments or rent or mortgage, the telephone was ever
disconnected, or other essential expenses were not met. The food hardship measure is constructed based on the question: –Which of the following statements best describes the food eaten in your household in the last 12 months: enough to eat, sometimes not enough to eat, or often not enough to eat?‖ We code those answering –sometimes‖ or –often not enough to eat‖ as food insufficient.

Veteran status is based on a self-report of ever having served on active duty (yes = 1). Disability is defined as the presence of a work-limiting physical, mental, or other condition that limits the kind or amount or work that can be performed (yes = 1). This question was only asked for persons aged 16 and older. We then create household-level interaction terms to capture different possible combinations of disability and veteran status: disabled veteran present; non-disabled veteran present; disabled nonveteran present; and non-disabled veteran with disabled nonveteran present. These four household types are compared to all households in which no household member is either disabled or a veteran.\(^2\)

Given that our measure of disability likely underestimates the presence of disability among household members who are over the age of 65 (who are more likely to be out of the labor force and therefore more likely to report functional limitations and disabilities other than work-related disability), we remove the 25% of households that contain adults ages 65 and older. In supplementary analyses, we estimated identical models on the entire sample of households and the results were consistent with the models reported below that only include households

\(^2\) Note that there is one more possible combination not represented in our typology—that of a disabled veteran and disabled nonveteran sharing the same household. Because our research indicated that this was a very small group, we include these households in the disabled veteran category.
without older adults. Supplemental analysis also indicated that among the working-aged households that contain at least one veteran, 25% of those households contain a veteran who served from May 1975 or later (which corresponds to the All-Volunteer Force era), 39% contain a veteran who served between August 1964 and April 1974 (which roughly corresponds to the Vietnam War era), 17% served before August 1964 (most likely during the Cold War or the Korean War), and 14% served across multiple time periods.³

The study also includes controls for a variety of demographic characteristics at the household level that are known to be associated with material hardship, including: the ratio of the household income to the federal needs standard for the household size, termed the income-to-needs ratio; the racial and ethnic composition of the household (Black only, Hispanic only, Asian only, and other and mixed races/ethnicities versus White only); the highest level of education achieved by a household member (high school, some college, college degree versus less than high school); the marital status of the householder (never married and previously married—divorced, widowed, or separated—versus married); the presence of children less than age 18 years old in the household (yes = 1); and if the household is located in an urban area (yes = 1).

Data Analysis

After describing the sample and the prevalence of material hardships overall, we present the proportion of households reporting the four measures of hardship, using our typology to distinguish households with respect to the work-limiting disability and veteran statuses of all adult household members. Then, we estimate logistic regression models to assess statistical significance using STATA version 10.1. We include dummy variables for each year, effectively

³ A small percentage of veterans were missing on period of service, so the percentages for period of service reported in the text do not sum to 100%.
the changes in material hardships over the 14-year period. We use sample weights in all analyses. Additionally, although not shown in the tables, we conduct supplemental analyses that test for statistically significant differences in the point estimates between each household type, defined by the veteran and disability statuses of adult household members. We report significant differences in the text.

RESULTS

Table 1 shows descriptive statistics for all of the variables included in the analysis. Considering first the four domains of material hardship, bill-paying hardship is most common (23.32 percent). About 1 in 9 households experience medical hardships; home hardships and food insufficiency are relatively rare experiences, occurring in approximately 3 percent of all households.

Focusing next on the five veteran and disability status categories that represent the focal independent variables in our analysis, the largest share of households, over two-thirds, contain neither a veteran nor a disabled household member, 13.67 percent of households contain a non-disabled veteran, and 13.27 percent of households are disabled nonveteran households. Less than three percent of all households contain a disabled veteran and only 1.21 percent of households are classified as non-disabled veteran households with a disabled nonveteran present.

Lastly, focusing on the control variables, approximately three-quarters of the households include Whites only, while 12.03 percent include Blacks only, 6.58 percent include Hispanics only, 2.40 percent include Asians only, and 5.14 percent include persons of other and mixed races/ethnicities. The distribution of highest educational attainment in the household ranges from 7.65 percent having less than high school education to 34.14 having a college degree or higher, with one-fourth having graduated from high school and 33.2 percent having some
college, respectively. Most householders are currently married (40.44 percent), followed by previously married (38.21 percent) and never married (21.35 percent). About 42 percent of households have at least one minor child in them. The mean income-to-needs ratio is 3.86, with supplemental analysis indicating that almost 14 percent of households live at or below the poverty threshold. About 82 percent of households are in metropolitan areas.

(Table 1 about here)

Table 2 shows the percentage of each household type (based on veteran and adult work-limiting disability status) reporting each of the four domains of material hardship. Several patterns emerge from Table 2. First, reports of all forms of material hardship are lowest for non-disabled veteran households: 1.26 percent for home hardship, 6.86 percent for medical hardship, 10.46 percent for bill-paying hardship, and 1.19 percent for food insufficiency. Households with no person with a disability or veteran also have relatively low rates of material hardship, although they are somewhat higher than among non-disabled veteran households. Disabled nonveteran households report the highest frequency of each type of material hardship: 6.13 percent for home hardship, 22.54 percent of medical hardship, 34.98 percent for bill-paying hardship, and 9.01 percent for food insufficiency. Disabled veteran households have surprisingly high levels of each type of material hardship; they rank second-highest by a substantial margin in all hardship domains: 5.51 percent for home hardship, 19.93 percent for medical hardship, 24.89 percent for bill-paying hardship, and 4.87 percent for food insufficiency. By comparison, non-disabled veteran households that include a disabled nonveteran do substantially better than households with a disabled veteran in all four domains.

(Table 2 about here)
Overall, while bill-paying hardship and medical hardship are consistently the first- and second-most frequently reported hardship domains across household types, veteran and nonveteran households differ in their likelihood of reporting home hardship and food insufficiency: nonveteran households (regardless of whether they include a person with a disability) report higher levels of food insufficiency than home hardship, while veteran households (regardless of whether they include a person with a disability) are more likely to report home hardship than food insufficiency. These bivariate relationships are examined more fully below in logistic regression models that control for demographic and compositional differences across household types.

Table 3 presents multivariate logistic regression models that examine the relationships between household types based on the veteran and work-limiting disability statuses of adult household members and each domain of material hardship, controlling for other known correlates of hardship at the household level. We begin by examining home hardship in the first column. Non-disabled veteran households are not significantly different from households without a person with a disability or a veteran. However, households that include a person with a disability, regardless of veteran status, face an elevated risk of home hardship. Disabled veteran households are 2.73 times more likely than households with no disabled person or veteran to experience home hardship. Compared to the same reference group, disabled nonveteran households are 2.27 times more likely to report home hardship. Finally, non-disabled veteran households with a disabled nonveteran are 1.91 times more likely to report home hardship than households with no disabled person and no veteran. Supplemental analyses (not shown) indicate that disabled veteran households are significantly more likely than non-disabled
veteran households to experience home hardship.\(^4\) Thus, while veteran status appears to be protective in relation to home hardship, the protection only accrues to households that do not include an adult with a work-limiting disability.

The pattern of results is similar in the second model predicting medical hardship. The sign on the coefficient for non-disabled veteran households is once again negative, but this time it is statistically significant, indicating these households have 10% lower odds of reporting medical hardship than households that do not include a person with a disability or a veteran. Households that include an adult with a work-limiting disability face an increased risk of reporting a medical hardship, regardless of veteran status; the odds ratios vary from 2.17 for disabled veteran households to 1.88 for non-disabled veteran households with a disabled nonveteran. Supplemental analyses (not shown) indicate once again that disabled veteran households experience significantly more medical hardship than non-disabled veteran households.\(^5\) Even though disabled veterans have access to an array of veteran health benefits that are not available to nonveterans or veterans with no disability, there is no evidence that the risk of medical hardship is diminished in the households of disabled veterans.

(Table 3 about here)

In the third model, we estimate the odds of bill-paying hardship and the patterns are very similar to those for home and medical hardships. Non-disabled veterans households enjoy a

\(^4\) A t-test rejects the null hypothesis that the coefficient for disabled veterans and non-disabled veterans are equal at \(p<0.001\).

\(^5\) A t-test rejects the null hypothesis that the coefficient for disabled veterans and non-disabled veterans are equal at \(p<0.001\). Note that a t-test for the difference in coefficients between disabled veterans and disabled nonveterans is marginally significant (\(p=0.089\)).
significantly decreased risk of bill-paying hardship relative to households with no person with a
disability or veteran, although the substantive effect is only moderate—a 9 percent reduction in
the odds. In contrast, the odds of bill paying hardship are similarly elevated among all of the
households that include a disabled person, regardless of veteran status. Compared to households
with no person with a disability or veteran, the odds of bill-paying hardship are 1.96 times higher
among disabled veteran households, 2.08 times higher among non-disabled veteran households
with a disabled nonveteran, and 2.04 times higher among disabled nonveteran households.
Supplemental analyses (not shown) again indicate that disabled veteran households experience
significantly more hardship than non-disabled veteran households.\(^6\) In the case of bill-paying
hardship, as with other forms of material hardship, it appears that the advantage that accrues to
veteran households is eliminated, and in fact reversed, when the veteran is disabled.

Finally, we estimate a model of food insufficiency. The odds of food insufficiency
among non-disabled veteran households and households with a non-disabled veteran along with
a disabled nonveteran are not significantly different from households with no disabled person or
veteran present. In comparison, relative to the same reference group, the odds of food
insufficiency are higher among disabled veteran (OR=2.12) and disabled nonveteran households
(OR=2.39). Consistent with our findings for other forms of material hardship, supplemental
analysis (not shown) indicates that disabled veteran households are significantly more likely than
non-disabled veteran households to experience food insufficiency.\(^7\)

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\(^6\) A t-test rejects the null hypothesis that the coefficient for disabled veterans and non-disabled
veterans are equal at \(p<0.001\).

\(^7\) A t-test rejects the null hypothesis that the coefficient for disabled veterans and non-disabled
veterans are equal at \(p<0.001\).
The other covariates in each of the four models yield estimates that are consistent with previous research in all regards. Blacks and Hispanics are more likely than Whites to experience home hardship, bill paying hardship, and food insufficiency, but are slightly less likely to experience medical hardship. Households that contain at least one person who has a college education are less likely to experience hardship than households where all members have less than a high school education. Being never married or previously married increases the risk of hardship, as does the presence of children under the age of 18 years. Higher income-to-needs ratios reduce the likelihood of hardship. Metropolitan location is positively associated with bill paying hardship and food insufficiency. Reports of home and medical hardships, respectively, declined across the survey periods, but there are no clear patterns of sustained change in bill-paying hardship and food insufficiency across the survey years.

**DISCUSSION**

This study contributes to the literatures on veteran well-being and material hardship. Using nationally representative data from the 1992-2004 panels of the Survey of Program Participation, we examine how adult work-limiting disability status moderates the relationship between veteran status and food insufficiency, medical hardship, housing hardship, and bill-paying hardship. Our results indicate that veteran and disability statuses jointly influence material hardships net of household income-to-needs, and household demographic and compositional characteristics. While non-disabled veteran households experience similar (home hardship and food insufficiency) or significantly lower (medical and bill-paying hardships) levels of material hardship as households with no disabled person or veteran, all other household types that include a person with a disability experience significantly higher levels of material hardship relative to the same reference group (with the exception of food insufficiency among non-
disabled veteran with a disabled nonveteran households). The odds ratios for all contrasts are in the range of 1.88 to 2.73 times higher, and some of the highest increases in the odds of hardship observed in these data are in households that include a veteran. Moreover, for all four types of material hardship, disabled veteran households experience significantly more hardship than non-disabled veteran households. To the best of our knowledge, this is the first paper to document material hardships among households with different configurations of (non-)veterans and (non-) disabled persons.

Several limitations of this study should be noted. First, results should be interpreted as descriptive and do not provide direct evidence of a treatment effect of military service on material hardship. It is possible that veteran households differ from other households on unobservable factors that influence their probability of reporting a hardship. Second, the measure of disability that we use here, work-limiting disability, does not capture the full range of specific functional limitations and disabled statuses that could influence the likelihood of material hardship within the household. Of particular note is that we removed from the analysis households that contained members who were aged 65 years and older because work-limiting disability underestimates disability among older adults. However, child disabilities may be present in the households and impacting the household well-being as well. As a consequence our estimates provide a downward biased account of the impact of disability on the risk of material hardship at the household level. Finally, since the purpose of this study is largely descriptive, we do not explore how participation in different disability or veteran programs is associated with well-being. However, we believe that this is an important topic of future research to explore.

The findings presented in this paper suggest other potential directions for future research as well. First, it will be important for future research to consider households that include persons
who are age 65 years and older, as the dynamics of poverty and material hardship in such households may be different than those that pertain in households that include persons who are under age 65 years. Second, recent research indicates that each domain of material hardship is empirically distinct from the other (Heflin, Sandberg, and Rafail 2009), that the strategies used to reduce the consequences of poverty and mitigate material hardship may also be domain-specific (Heflin, London, and Scott forthcoming), and that there are substantial differences in household poverty status by the veteran and disability statuses of household members (London, Heflin, and Wilmoth in review). Future research should investigate whether the strategies used by veteran and nonveteran households to mitigate specific hardships vary, including whether access to and use of family, extended social network, community, and institutional resources differs. Finally, future research should be mindful of how care work and paid work can conflict (Cancian and Oliker 2000), and investigate differences in the role of caregiver work-family tradeoffs and burdens in contributing to the material hardship faced by households that contain disabled veterans and nonveterans.

Our results suggest that it is important to recognize the underlying heterogeneity in the veteran population. While non-disabled veteran households may be faring better in terms of experiences of material hardship than comparable households, disabled veteran households face a distinct disadvantage relative to their non-disabled nonveteran peers. Veteran programs that were created to address the special challenges that disabled veteran households face, may not be fully meeting the needs of these households in terms of allowing them to address basic needs in the areas of food, medical care, adequate housing, and bill paying. Further research is needed to investigate if the primary issue is non-participation in current veteran programs or if the veteran
program participants are experiencing a hole in their social safety net as recent analyses suggest (Fulton et. al 2009; Perle 2010).
REFERENCES


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Parish, Susan, Roderick A. Rose, Margaret Andrews. 2009. —Income poverty and material hardship among US women with disabilities.‖ *Social Service Review, 2009*: 33-


She, Peiyun and Gina A. Livermore. 2007. –Material Hardship, Poverty, and Disability Among Working-Age Adults‖ Social Science Quarterly. 88(4): 970-989.


[http://siadapp.dmdc.osd.mil/personnel/M01/fy05/m01fy05.pdf](http://siadapp.dmdc.osd.mil/personnel/M01/fy05/m01fy05.pdf).
I. Introduction

The relationship between veteran status and functional limitations and disabilities is an important area of study. The Federal Benefits for Veterans, Dependents, and Survivors (2009a) provides a comprehensive overview of the benefits available to veterans, dependents, and survivors. The General Factsheet (2009b) offers detailed information on the eligibility criteria and procedures for obtaining these benefits. The Handbook of the Sociology of Aging (Angel & Settersten, 2010) offers a comprehensive overview of the theories and research on aging, including the impact of veteran status on health and well-being.

II. Methods

The research methods used in this study include a review of existing literature on veteran status and health, as well as a survey of veterans and their families. The survey was conducted online and included questions on veteran status, functional limitations, and overall health. The data was analyzed using descriptive statistics and regression analysis.

III. Results

The results of the survey indicate that veteran status has a significant impact on functional limitations and disabilities. Veterans who served in a combat zone are more likely to report functional limitations than those who did not serve in a combat zone. The results also show that veterans who served in a combat zone are more likely to report higher levels of disability than those who did not serve in a combat zone.

IV. Discussion

These findings highlight the need for further research on the impact of veteran status on health and well-being. The results also suggest that veterans who served in a combat zone may require additional support and resources to manage their functional limitations and disabilities. Future research should focus on developing effective interventions to support veterans and their families.

V. Conclusion

In conclusion, the relationship between veteran status and functional limitations and disabilities is an important area of study. The findings of this study suggest that veterans who served in a combat zone are more likely to report functional limitations and higher levels of disability than those who did not serve in a combat zone. Future research should focus on developing effective interventions to support veterans and their families.

References


Table 1. Descriptive Statistics (N=58,686a)

<table>
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<tr>
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<th>Percentage</th>
</tr>
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</tr>
<tr>
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</tr>
<tr>
<td>Bill Paying Hardship</td>
<td>23.32</td>
</tr>
<tr>
<td>Food Insufficiency</td>
<td>3.32</td>
</tr>
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</tr>
<tr>
<td>Disabled veteran</td>
<td>2.71</td>
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<tr>
<td>Non-disabled veteran with a disabled nonveteran</td>
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<tr>
<td>Disabled nonveteran</td>
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<tr>
<td>No person with disability or veteran</td>
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<td>Less than high school</td>
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<tr>
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<tr>
<td>Previously Married</td>
<td>38.21</td>
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<tr>
<td><strong>Household Income-to-Needs</strong> (range=−6.2 to 101.9)</td>
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</tr>
<tr>
<td><strong>Children &lt; 18 Years in Household</strong> (1=yes)</td>
<td>41.71</td>
</tr>
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<td><strong>Metropolitan Household</strong> (1=yes)</td>
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<tr>
<td><strong>Survey Year</strong></td>
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<tr>
<td>1992</td>
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<tr>
<td>1993</td>
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<td>1996</td>
<td>19.85</td>
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<tr>
<td>2001</td>
<td>17.05</td>
</tr>
<tr>
<td>2004</td>
<td>24.41</td>
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</table>

Notes: a. The N for all of the covariates is 58,686. Due to small amounts of missing data on the outcome variables, the Ns are smaller for Medical Hardship (N=57,514), Bill-paying Hardship (N=57,057), and Food Insufficiency (N=57,597). Home hardship was not measured in 1993; the N for Home Hardship is 46,484.
Table 2. Percentage Reporting Specific Hardships, by Household Disability and Veteran Status Categories

<table>
<thead>
<tr>
<th>Household Disability and Veteran Status</th>
<th>Home Hardship</th>
<th>Medical Hardship</th>
<th>Bill-paying Hardship</th>
<th>Food Insufficiency</th>
</tr>
</thead>
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<tr>
<td>Non-disabled veteran</td>
<td>1.26</td>
<td>6.86</td>
<td>10.46</td>
<td>1.19</td>
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<tr>
<td>Disabled veteran</td>
<td>5.51</td>
<td>19.93</td>
<td>24.89</td>
<td>4.87</td>
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<td>Non-disabled veteran with a disabled nonveteran</td>
<td>2.86</td>
<td>13.02</td>
<td>18.92</td>
<td>3.28</td>
</tr>
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<td>Disabled nonveteran</td>
<td>6.13</td>
<td>22.54</td>
<td>34.98</td>
<td>9.01</td>
</tr>
<tr>
<td>No person with disability or veteran</td>
<td>2.15</td>
<td>9.89</td>
<td>16.58</td>
<td>2.59</td>
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</table>
### Table 3. Logistic Regression Analysis of Four Types of Material Hardship

<table>
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<th>Variable (reference category)</th>
<th>Home Hardship</th>
<th>Medical Hardship</th>
<th>Bill-paying Hardship</th>
<th>Food Insufficiency</th>
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</thead>
<tbody>
<tr>
<td><strong>Household Veteran and Disability Statuses</strong> (No person with disability or veteran)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>Non-disabled veteran</td>
<td>-0.234 0.79</td>
<td>-0.110 0.90  *</td>
<td>-0.098 0.91  *</td>
<td>-0.208 0.81</td>
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<td></td>
<td>(0.143)</td>
<td>(0.056)</td>
<td>(0.047)</td>
<td>(0.142)</td>
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<tr>
<td>Disabled veteran</td>
<td>1.006 2.73  ***</td>
<td>0.780 2.17  ***</td>
<td>0.672 1.96  ***</td>
<td>0.750 2.12  ***</td>
</tr>
<tr>
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<td>(0.158)</td>
<td>(0.075)</td>
<td>(0.071)</td>
<td>(0.150)</td>
</tr>
<tr>
<td>Non-disabled veteran with a disabled nonveteran</td>
<td>0.648 1.91  *</td>
<td>0.632 1.88  ***</td>
<td>0.731 2.08  ***</td>
<td>0.539 1.71</td>
</tr>
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<td>(0.286)</td>
<td>(0.126)</td>
<td>(0.111)</td>
<td>(0.292)</td>
</tr>
<tr>
<td>Disabled nonveteran</td>
<td>0.821 2.27  ***</td>
<td>0.648 1.91  ***</td>
<td>0.714 2.04  ***</td>
<td>0.870 2.39  ***</td>
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<td>(0.080)</td>
<td>(0.038)</td>
<td>(0.034)</td>
<td>(0.070)</td>
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<td>Black Only</td>
<td>0.305 1.36  ***</td>
<td>-0.185 0.83  ***</td>
<td>0.459 1.58  ***</td>
<td>0.103 1.11</td>
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<td>(0.093)</td>
<td>(0.047)</td>
<td>(0.038)</td>
<td>(0.086)</td>
</tr>
<tr>
<td>Hispanic Only</td>
<td>0.565 1.76  ***</td>
<td>-0.134 0.87  *</td>
<td>0.123 1.13  **</td>
<td>0.344 1.41  ***</td>
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<td>(0.056)</td>
<td>(0.047)</td>
<td>(0.090)</td>
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<td>Asian Only</td>
<td>-0.044 0.96</td>
<td>-0.131 0.88</td>
<td>-0.152 0.86</td>
<td>0.281 1.32</td>
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<td>(0.220)</td>
<td>(0.096)</td>
<td>(0.083)</td>
<td>(0.172)</td>
</tr>
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<td>0.514 1.67  ***</td>
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<td>0.106 1.25  ***</td>
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<td>(0.130)</td>
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<td>(0.047)</td>
<td>(0.122)</td>
</tr>
<tr>
<td><strong>Highest Education in Household</strong> (Less than high school)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| High School Graduate  | 0.040 1.04 | 0.006 1.00 | 0.106 1.11  * | -0.211 0.81  *
<p>|                       | (0.105)  | (0.054)          | (0.047)             | (0.082)            |
| Some College          | 0.042 0.96 | 0.081 1.08  ** | 0.112 1.12  * | -0.294 0.75  ** |</p>
<table>
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<tbody>
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<td>College</td>
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<td>-0.383</td>
<td>0.68</td>
<td>**</td>
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<td>(0.056)</td>
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<td>(0.039)</td>
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<tr>
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<td>0.400</td>
<td>1.49</td>
<td>***</td>
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<td>(0.033)</td>
<td>(0.033)</td>
<td>(0.038)</td>
<td>(0.033)</td>
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<td>***</td>
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<td>1996</td>
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<td>0.87</td>
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*Note: Statistical significance levels are indicated by ** for p < 0.01, *** for p < 0.001.*
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<td>Number of Observations</td>
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Significance levels: *=p<0.05; **=p<0.01; ***=p<0.001;