Title

The Health Consequences of Adverse Labor Market Events: Evidence from Panel Data

Journal

Industrial Relations A Journal of Economy and Society, 54(3)

ISSN

0019-8676

Authors

Maclean, Johanna Catherine
Webber, Douglas A
French, Michael T
et al.

Publication Date

2015-07-01

DOI

10.1111/irel.12099

Peer reviewed

The Health Consequences of Adverse Labor Market Events: Evidence from Panel Data*

JOHANNA CATHERINE MACLEAN, DOUGLAS A. WEBBER, MICHAEL T. FRENCH, and SUSAN L. ETTNER

This study investigates the associations between self-assessed adverse labor market events (experiencing problems with coworkers, employment changes, financial strain) and health. Longitudinal data are obtained from the National Epidemiological Survey of Alcohol and Related Conditions. Our findings suggest problems with coworkers, employment changes, and financial strain are associated, respectively, with a 3.1 percent (3.3 percent), 0.9 percent (0.2 percent), and 4.5 percent (5.1 percent) reduction in mental health among men (women). Associations are smaller in magnitude and less significant for physical health.

Introduction

Economic theory and empirical evidence predict that the employed have better health than the unemployed. Several channels suggest a link between employment and health. Income is positively associated with health in standard economic theories of the demand for health capital (Grossman 1972) and empirical research documents that the employed have better health than the unemployed (Roelfs et al. 2011). Features of employment such as job loss and job satisfaction predict health even after conditioning on income (Fischer and Sousa-Poza 2009; Sullivan and von Wachter 2009). In other words, employment can impact health through both income and nonincome channels. Given the centrality of paid work in American life, understanding and mitigating the health consequences of experiencing adversity in the labor market could lead to health improvements for a substantial segment of the population.

*The authors' affiliations are, respectively, Temple University, Philadelphia, Pennsylvania; Email: *catherine.maclean@temple.edu*; Temple University, Philadelphia, Pennsylvania and IZA; Email: *douglas.webber@temple.edu*; University of Miami, Miami, Florida. Email: *mfrench@miami.edu*; David Geffen School of Medicine and Department of Health Policy and Management, Jonathan and Karin Fielding School of Public Health at the University of California Los Angeles, Los Angeles, California; Email: *settner@mednet.ucla.edu*.

JEL: I1, I12, J2.

INDUSTRIAL RELATIONS, Vol. 54, No. 3 (July 2015).
Published by Wiley Periodicals, Inc., 350 Main Street, Malden, MA 02148, USA, and 9600 Garsington Road, Oxford, OX4 2DQ, UK.

In this study we extend the knowledge base on employment and health by examining whether experiencing three novel and common adverse labor market events measured from the worker's perceptive are associated with mental and physical health. Our measures of adverse labor market events include self-reported problems with coworkers, employment changes, and perceived financial strain.[1] We obtain data on a sample of men and women ages 25 to 64 years from the National Epidemiological Survey of Alcohol and Related Conditions (NESARC). The longitudinal nature of our data allows us to control for time-invariant unobserved person-level heterogeneity, which could bias cross-sectional analyses. Our results indicate that experiencing problems with coworkers, employment changes, and financial strain are associated with a 3.1 percent (3.3 percent), 0.9 percent (0.2 percent), and 4.5 percent (5.1 percent) reduction in mental health among men (women), respectively. The estimated associations are smaller in magnitude and less significant for physical health. We provide evidence that our results are not fully attributable to reverse causality or attrition.

This study makes several contributions to the economics literature. First, we consider three important and relatively common adverse labor-market events that have received little attention in the economics literature. Problems with coworkers occur frequently in modern workplaces as evidenced by the attention they receive in the popular media (e.g., television, books, magazines, blogs). Similarly, taking on new responsibilities at work or changing work hours, or jobs themselves, are typical transitions as workers progress along the employment ladder, but could lead to stress (e.g., learning new skills, establishing relationships with new colleagues, longer work hours, increased responsibility). The 2007 to 2009 recession led to substantial reductions in labor-market earnings and potentially induced financial strain among many Americans. Thus, estimating associations between these common and understudied events and health is important for understanding and improving (through effective interventions) quality of life and worker productivity. Moreover, unlike much of the existing literature, our measures are subjective employment experiences and thereby complement the research that examines more objective measures (e.g., job loss). Second, this study contributes to the literature on income and health. Although standard economic models predict that income improves health by allowing the consumer to purchase health inputs (Grossman 1972), empirical work has produced mixed results on the

[1] Non–labor-market events can also lead to financial strain (e.g., expensive medical treatments, a declining housing market). In addition, our measure of employment change could represent a promotion or demotion in position. However, we argue in a later section that either type of employment change could impose transitional problems.

health–income relationship. It may be the case that income *per se* is less important for health than substantial *reductions* in income that could lead to financial instability and poor health. To address this issue, we examine a unique measure of perceived financial strain: reporting a major financial crisis, declaring bankruptcy, or multiple instances of inability to pay bills on time in the past year. Although previous economic work has included proxies for financial strain based on assets and liabilities, we are able to capture financial constraints that are directly perceived by the individual and thus may better capture the type of financial problems that lead to health problems. Last, using detailed information contained in the NESARC, we are able to at least partially address important sources of bias that plague analyses of the impact of employment and income on health: omitted variables, reverse causality, and attrition.

Conceptual Framework and Related Work

Grossman (1972) proposed what is now a standard theoretical model to describe the demand for health capital. Consumers are endowed with a health stock and they value health and other goods. Individuals maximize utility given their preferences, prices, budget constraint, and health production function. Health is a stock variable that depreciates over time and consumers make investments in their health to prevent or slow depreciation. Our adverse labor market events can be viewed as arguments in the health production function. Satisfying and stable jobs can enhance health, while stressful, unpredictable, and otherwise undesirable work environments may impede health. Moreover, income allows consumers to purchase health inputs in the marketplace (e.g., medical services). In other words, employment can impact health through both income and nonincome channels. This economic framework guides our empirical analysis.

Next, we briefly review related literature. Although many studies examine correlations among income, employment, aspects of the work environment, and health, we focus our attention here on economic studies that apply rigorous research designs (e.g., instrumental variables, person fixed effects, job loss following a plant closure or mass layoff, unexpected income receipts through lotteries and inheritances) to estimate causal effects.

Conceptually, health is a normal good (Grossman 1972), but the economics literature provides mixed empirical evidence on the direction and strength of the income–health relationship. Using an instrumental variables framework, Ettner (1996) documents that increases in income significantly improve both mental and physical health. A set of studies utilizes lottery winnings to examine the impact of income changes on health (Apouey and Clark 2014; Gardner

and Oswald 2007; Lindahl 2005). However, these studies provide mixed evidence on the direction and magnitude of the relationship. Analyses that exploit variation in income generated by the Social Security Notch or inheritances show no, or a negative, causal relationship between income and mortality (Kim and Ruhm 2012; Snyder and Evans 2006). Frijters, Haisken-DeNew, and Shields (2005) examine income among East Germans following the German reunification and find a modest positive relationship between income and self-reported health. The mixed findings in the literature may be driven by differences in research designs, settings, analysis samples, or health outcomes (Kim and Ruhm 2012). Reconciling this literature is an open and important question for the economics literature, and is a fruitful topic for future research.

Other aspects of labor-market success may have an independent impact on health. For example, debt obligations are linked with poor health even after conditioning on income (Zimmerman and Katon 2005). Job loss, which leads to reductions in income (Jacobson, LaLonde, and Sullivan 1993) as well as time costs for health investments, is generally associated with morbidity, premature mortality, and unhealthy behaviors (Deb et al. 2011; Strully 2009; Sullivan and von Wachter 2009). For example, Sullivan and von Wachter (2009) showed that a man who is displaced from his job at age 40 lives 1 to 1.5 fewer years than an otherwise similar nondisplaced man. However, analysis of job displacements using European data (Browning, Dano, and Heinesen 2006) calls to question the relationships estimated with U.S. data. Moreover, workers with past unemployment spells have worse health than continuously employed workers and, in general, the unemployed are less healthy than the employed (Clark, Georgellis, and Sanfey 2001; Mullahy and Sindelar 1996).

Other dimensions of the work environment, such as job satisfaction, prestige, occupation, commuting time, and hazardous work conditions also influence health after conditioning on income (Fischer and Sousa-Poza 2009; Fletcher, Sindelar, and Yamaguchi 2011; Lakdawalla and Philipson 2007; Morefield, Ribar, and Ruhm 2012; Rablen and Oswald 2008; Rashad Kelly et al. 2014; Roberts, Hodgson, and Dolan 2011). These studies demonstrate that, independent of income, better working conditions and desirable jobs lead to better health.

Collectively, this brief review of the literature suggests that our measures of adverse labor market events will significantly impact health. Our study builds on the existing body of research by examining three measures that capture novel and common adverse labor market events, none of which have been considered in earlier studies. Moreover, because our measures represent the worker's perception of his/her labor market experience and financial status, they complement existing studies that have primarily focused on more objective measures (e.g., income, job loss).

Data, Variables, and Methods

The National Epidemiological Survey of Alcohol and Related Conditions (NESARC). We analyze longitudinal data from the NESARC, a large and nationally representative survey conducted by the U.S. Bureau of the Census for the National Institute on Alcohol Abuse and Alcoholism. The survey was developed and administered to study alcohol misuse and its determinants and consequences in a large community sample of American adults (Grant et al. 2003). To this end, the NESARC collects highly detailed information on health, health behaviors, attitudes, and experiences. Wave I was fielded between August 2001 and May 2002 (N = 43,093) and Wave II was fielded between August 2004 and August 2005 (N = 34,653). We exclude respondents younger than 25 and older than 64 in both waves to focus on individuals who have completed their education and have not yet transitioned into retirement (n = 22,764). We next exclude respondents who report being enrolled in school at the time of the survey (n = 987). Finally, we exclude those who report no past-year employment in either wave (n = 13,332). These selection rules allow us to analyze a sample that is at risk for all adverse labor-market events we study. For example, a person who did not work in the past year is not at risk for problems with coworkers or employment changes. However, we may exclude individuals with the most severe events (e.g., those in long-term unemployment), so we view our results as lower-bound estimates. Last, we drop respondents with missing control variables (these variables are detailed in a later section; n = 296), and who did not appear in both waves (n = 9359). Our analysis sample includes 7543 men and 7961 women. Although any sample selection rules are to some extent arbitrary, our findings are highly robust to alternative rules.

Health measures. We examine two measures of health: SF12-V2 mental component score (MCS) and SF12-V2 physical component score (PCS) (Ware et al. 2002). The MCS is based on twelve questions and captures mental functioning during the past 4 weeks from the individual's perspective (see Appendix Table A.1 for included items). The MCS ranges from 0 to 100 and is normed to have a mean of 50 and a standard deviation of 10. Higher scores indicate better mental functioning. The PCS is calculated similar to the MCS and is based on the same twelve questions, except that this variable measures physical functioning. Both the MCS and PCS are commonly utilized within the health economics literature to measure health (Balsa et al. 2009; Davalos and French 2011; Ettner, Maclean, and French 2011; Gade and Wenger 2011; McInerney and Mellor 2012).

Adverse labor-market events. We examine three past-year adverse labor market events: problems with coworkers (this variable includes problems

supervisors); changes in job, job responsibilities, and/or work hours (henceforth employment changes); and perceived financial strain. For each of the events, we code respondents as one if they affirm the event and zero otherwise. It is worth noting that these measures, particularly problems with coworkers and financial strain, are self-assessed and subject to interpretation by respondents. Thus, a fair amount of heterogeneity in these events is likely. Moreover, these variables need not necessarily map directly to objective changes in employment or income. However, we believe an individual's perception of changes in employment and financial stability is important information *per se* and it measures a dimension of labor-market experience that is potentially missed by other more objective measures. Indeed, self-reported job satisfaction, an inherently subjective measure, is a standard metric studied within labor economics (Artz 2010; Böckerman and Ilmakunnas 2009; Card et al. 2012; Clark, Kristensen, and Westergård-Nielsen 2009; Kosteas 2011). Moreover, inclusion of person fixed effects in our regression models will account for time-invariant heterogeneity across individuals in assessment of labor-market adversity.

The employment change variable possesses a potential drawback. Employment change may represent a positive or negative labor-market event. Regardless, this variable captures transitional effects, which are often stressful even if the transition leads to an improvement in employment status (e.g., psychic costs of establishing relationships, increased responsibility that may come with a promotion). Supporting this premise, Boyce and Oswald (2012) showed that promotions lead to deteriorations in psychological health in a sample of British workers.

Our measure of perceived financial strain asks respondents whether they have experienced a major financial crisis, declared bankruptcy, or were more than once unable to pay bills on time. Unlike standard proxies for financial strain in the economics literature that compare assets to liabilities (Zimmerman and Katon 2005), we are able to capture perceived financial strain. Thus, this variable may better capture the type of financial events that are relevant for health. However, as noted above, individuals are likely heterogeneous in how they report these experiences. For example, what may be perceived as a financial crisis to one individual may be considered a minor financial problem to another.

Control variables. Because our preferred specifications include person fixed effects, and these fixed effects subsume all time-invariant personal characteristics, we control for a parsimonious set of health predictors in our regression models. Specifically, we control for age in years, household income in 2004 dollars, an indicator for being fired or laid-off during the past year (including this variable conditions on particularly poor labor-market events and further allows us to interpret the employment change variable as capturing

transitional effects), marital status (divorced/separated, widowed, and never married, with married as the omitted category), an indicator for any children under age 18 in the household, an indicator for any health insurance, and wave fixed effects. Household income in the NESARC is categorical[2] and we construct a pseudo-continuous measure by assigning the midpoint value of each income category. For the top income category ($200,000 or higher), we recode household income as $300,000. Household income is plausibly influenced by the adverse labor-market events we study, and thus potentially endogenous in our regression models. Including endogenous controls in regression models can lead to biased parameter estimates (Angrist and Pischke 2009). In unreported analysis, we re-estimate our models without the household income variable and results are highly consistent, however.

Empirical model. We estimate person fixed effects health production functions specified in Equation (1):

$$H_{it} = \beta_1' LM_{it} + \beta_2' X_{it} + W_t + \alpha_i + \epsilon_{it} \quad (1)$$

By including person fixed effects, we investigate changes in, rather than the level of, health and adverse labor market events. H_{it} is health (physical or mental) for individual i at time t, LM_{it} is a vector of adverse labor market events, X_{it} is a vector of time-varying personal characteristics, W_t is the survey wave fixed effect, α_i represents person fixed effects, and ε_{it} is a random error term. We apply NESARC sample weights in all analyses, which account for survey design, so our findings are generalizable from our NESARC sample to the U.S. population ages 25 to 64. Standard errors are clustered around the individual.[3,4]

Results

We next report descriptive statistics for our analysis sample, an analysis of the within-person variation in the adverse labor-market events and outcome variables contained in our data, and our core regression results.

[2] The categories include: < $5,000; $5,000 to $7,999; $8,000 to $9,999; $10,000 to $12,999; $13,000 to $14,999; $15,000 to $19,999; $20,000 to $24,999; $25,000 to $29,999; $30,000 to $34,999; $35,000 to $39,999; $40,000 to $49,999; $50,000 to $59,999; $60,000 to $69,999; $70,000 to $79,999; $80,000 to $89,999; $90,000 to $99,999; $100,000 to $109,999; $110,000 to $119,999; $120,000 to $149,999; $150,000 to $199,999; and ≥ $200,000.

[3] Estimates of precision are consistent if we estimate heteroskedasticity-robust standard errors.

[4] In unreported analysis, we re-estimate all equations with random effects models and the results are consistent in sign, magnitude, and statistical significance to the reported results.

TABLE 1

HEALTH, ADVERSE LABOR-MARKET EVENTS, AND PERSONAL CHARACTERISTICS: MEN (N = 15,086)

Variable	Wave I Mean/proportion	Wave II Mean/proportion
Health		
Mental component score	54.38 (SD=7.29)	53.59 (SD=7.37)
Physical component score	54.14 (SD=6.46)	53.68 (SD=6.74)
Adverse labor-market events[a]		
Problems with coworkers	0.10	0.10
Employment change[b]	0.24	0.24
Perceived financial strain	0.09	0.09
Personal characteristics		
Age	41.21 (SD=9.39)	44.28 (SD=9.37)
Household income	$71,410 (SD=$54,606)	$80,778 (SD=$60,657)
Fired or laid off	0.05	0.05
Married or living as married	0.76	0.77
Divorced/separated	0.10	0.11
Widowed	0.00	0.01
Never married	0.14	0.12
Child under age 18 in the household	0.51	0.46
Any health insurance	0.84	0.78
White	0.73	0.73
African American	0.09	0.09
Asian	0.04	0.04
Hispanic	0.12	0.12
American Indian	0.02	0.02
Less than high school	0.10	0.10
High school	0.26	0.26
Some college	0.29	0.29
College degree	0.19	0.18
Graduate school	0.16	0.17

NOTES: NESARC sample weights applied. Observations with missing information, younger than 25 and older than 64 years in both Wave I and II, current enrollment in school, or did not report any work in the past year in Wave I and Wave II are excluded.

[a]Adverse labor-market event variables pertain to the past year.

[b]Employment change includes changes in employment hours, roles/responsibilities, or job.

Sample characteristics. Table 1 (Table 2) reports summary statistics for men (women) at Waves I and II. The mean MCS and PCS values in the male sample are 54.38 and 54.14 in Wave I, and decline to 53.59 and 53.68 in Wave II. The analysis sample of men has above average mental and physical health compared to the full sample (recall that the MCS and PCS are normed to have a mean of 50), which is not surprising given that we study a sample of relatively young (ages 25 to 64) men with comparatively high labor market attachment.

The proportion of the sample that reports adverse labor-market events is stable across the two waves (differences are generally not statistically different). At Wave I, 10 percent, 24 percent, and 9 percent of the male sample report

TABLE 2

HEALTH, ADVERSE LABOR-MARKET EVENTS, AND PERSONAL CHARACTERISTICS: WOMEN (N = 15,922)

Variable	Wave I Mean/proportion	Wave II Mean/proportion
Health		
Mental component score	52.37 (SD=8.25)	51.41 (SD=8.62)
Physical component score	53.86 (SD=7.37)	53.22 (SD=7.61)
Adverse labor-market events[a]		
Problems with coworkers	0.12	0.11
Employment change[b]	0.27	0.25
Perceived financial strain	0.11	0.13
Personal characteristics		
Age	41.91 (SD=9.40)	44.99 (SD=9.40)
Household income	$65,521 (SD=$51,403)	$72,564 (SD=$55,282)
Fired or laid off	0.03	0.03
Married or living as married	0.69	0.69
Divorced/separated	0.16	0.17
Widowed	0.02	0.03
Never married	0.13	0.12
Child under age 18 in the household	0.50	0.43
Any health insurance	0.85	0.78
White	0.71	0.71
African American	0.13	0.13
Asian	0.04	0.04
Hispanic	0.10	0.10
American Indian	0.02	0.02
Less than high school	0.08	0.08
High school	0.25	0.24
Some college	0.34	0.35
College degree	0.17	0.17
Graduate school	0.17	0.18

NOTES: NESARC sample weights applied. Observations with missing information, younger than 25 and older than 64 years in both Wave I and II, current enrollment in school, or did not report any work in the past year in Wave I and Wave II are excluded.

[a]Adverse labor-market event variables pertain to the past year.

[b]Employment change includes changes in employment hours, roles/responsibilities, or job.

problems with coworkers, employment changes, and perceived financial strain, respectively, and the proportions are nearly identical at Wave II. Approximately 33 percent of the male sample reports any of the three adverse labor-market events in the past year. Although time invariant and thus not included in the regression models, race/ethnicity and education are reported in Table 1 for comparison purposes.

Table 2 reports comparable summary statistics for women. At Wave I, the MCS and PCS scores are 52.37 and 53.86. By Wave II, the MCS and PCS scores decline to 51.14 and 53.22, and these differences are statistically significant ($p \leq 0.01$). At Wave I, 12 percent, 27 percent, and 11 percent of the female sample report problems with coworkers, employment change, and

perceived financial strain, respectively. By Wave II, these values are 11 percent, 25 percent, and 13 percent, respectively. Approximately 39 percent of the female sample reports any of the three adverse labor-market events in the past year.

Because we estimate person–fixed-effect models, we identify parameter estimates of respondents who experience changes in health and adverse labor-market events between Waves I and II. Thus, it is vital that our data contain sufficient variation in these variables to reliably estimate parameters. Table 3A reports statistics on the proportion of the sample that experiences each adverse labor-market outcome at Wave I and not at Wave II, Wave II and not Wave I, at both waves, and at neither wave. We report the unweighted sums and percentages for each of the mutually exclusive and collectively exhaustive categories. For example, 6.10 percent (n = 460), 7.03 percent (n = 530) 3.17 percent (n = 240), and 83.70 percent (n = 6313) of men in our analysis sample report perceived financial strain at Wave I and not at Wave II, Wave II and not Wave I, at both waves, and at neither wave, respectively.

In Table 3B we report the average changes in the MCS and PCS across waves as well as the associated standard deviations, for men and women. The mean change in the MCS and PCS between Wave I and II for men is –0.693 and –0.465, and the associated standard deviations are 8.914 and 7.366. The magnitude of the changes in MCS and PCS from Wave I to Wave II is similar among women.

Regression results. Table 4 reports regression results for the associations between adverse labor-market events and health. The top panel reports MCS results and the bottom panel reports PCS results. In Column (1) we report results from models that estimate Equation (1) with each adverse labor-market event entered separately. That is, each cell is from a separate regression and

TABLE 3A

ADVERSE LABOR-MARKET EVENTS: CHANGE STATUS BETWEEN WAVE I AND WAVE II

	Event in Wave I, Not in Wave II	Event in Wave II, Not Wave I	Event in Both Wave I and II	No Event in Wave I or II
		Men		
Problems with coworkers	520 (6.90%)	533 (7.07%)	212 (2.81%)	6280 (83.23%)
Employment change	1131 (15.00%)	1168 (15.49%)	630 (8.35%)	4614 (61.16%)
Perceived financial strain	460 (6.10%)	530 (7.03%)	240 (3.17%)	6313 (83.70%)
		Women		
Problems with coworkers	685 (8.60%)	658 (8.27%)	271 (3.40%)	6347 (79.73%)
Employment change	1389 (17.45%)	1268 (15.93%)	819 (10.29%)	4485 (56.34%)
Perceived financial strain	596 (7.49%)	774 (9.72%)	435 (5.46%)	6156 (77.33%)

TABLE 3B

HEALTH OUTCOMES: CHANGE BETWEEN WAVE I AND WAVE II

	Mean	Standard Deviation
Men		
Mental component score	–0.693	8.914
Physical component score	–0.465	7.366
Women		
Mental component score	–1.087	10.030
Physical component score	–0.653	8.068

TABLE 4

SELECTED FIXED-EFFECTS REGRESSION RESULTS FOR ADVERSE LABOR-MARKET EVENTS AND HEALTH

	Men (N=15,086)		Women (N=15,922)	
	(1) Adverse labor-market events entered individually	(2) Adverse labor-market events entered collectively	(1) Adverse labor-market events entered individually	(2) Adverse labor-market events entered collectively
Outcome variable: Mental component score				
Sample mean	53.99 (SD=7.29)		51.89 (SD=7.37)	
Problems with coworkers	–1.906***	–1.674***	–1.969***	–1.701***
	(0.344)	(0.344)	(0.348)	(0.346)
Employment change	–0.741***	–0.490**	–0.433*	–0.103
	(0.224)	(0.230)	(0.235)	(0.241)
Perceived financial strain	–2.620***	–2.426***	–2.837***	–2.635***
	(0.399)	(0.398)	(0.378)	(0.380)
Outcome variable: Physical component score				
Sample mean	53.91 (SD=6.46)		53.54 (SD=6.74)	
Problems with coworkers	0.137	0.193	–0.011	0.118
	(0.267)	(0.266)	(0.262)	(0.266)
Employment change	–0.0239	0.0463	–0.410**	–0.386*
	(0.176)	(0.185)	(0.206)	(0.209)
Perceived financial strain	–0.743**	–0.743**	–0.941***	–0.917**
	(0.323)	(0.322)	(0.356)	(0.356)

NOTES: All models estimated with fixed effects linear regression, and are weighted with the NESARC survey weights and control for age, household income, fired or laid-off, marital status (divorced/separated, widowed, and never married, with married or living as married as the omitted category), an indicator for a child under age 18 in the household, an indicator for any health insurance, and survey wave fixed effects. Standard errors are reported in parentheses and clustered at the individual level.

*** $p \leq 0.01$; ** $p \leq 0.05$; * $p \leq 0.10$.

reports the association between adverse labor-market event j and health without controlling for the j - 1 other events. Column (2) reports results from our preferred specification, which enters the adverse labor-market events collectively into the health production function. The latter set of results minimizes potential bias from omitted variables.

We first consider our measure of mental health (i.e., MCS). In specifications that enter each adverse labor-market event individually, problems with coworkers, employment change, and perceived financial strain are associated, respectively, with a 1.91, 0.74, and 2.62 unit (3.5 percent, 1.4 percent, and 4.9 percent) decrease in the MCS ($p \leq 0.01$). As expected, the parameter estimates are attenuated in models that enter all three adverse labor-market events collectively. Namely, problems with coworkers, employment change, and perceived financial strain are associated, respectively, with a 1.67, 0.49, and 2.43 unit (3.1 percent, 0.9 percent, and 4.5 percent) reduction in the MCS. Among women, only problems with coworkers and financial strain significantly predict MCS in our preferred specification. Quantitatively, experiencing problems with coworkers and financial strain are associated with a 1.70 and 2.64 unit (3.3 percent and 5.1 percent) reduction in the MCS. To provide some context on the size of these associations, problems with coworkers and financial strain represent roughly three-tenths and two-fifths (one-fifth and one-third) of a standard deviation change in MCS scores among males (females). Stated differently, the magnitude of the financial strain association is equivalent to moving from roughly the seventieth percentile to the fiftieth percentile in both the male and female MCS distributions.

We next turn to our measure of physical health (i.e., PCS). Adverse labor market events, as measured in this study, are not as important predictors of physical health as they are for mental health. Among men, only financial strain significantly predicts the PCS and the magnitude of the association is smaller than in the MCS regressions. Specifically, experiencing this adverse labor-market event is associated with a 0.74 unit (1.4 percent) reduction in the PCS in models that enter all three adverse labor-market events collectively ($p \leq 0.05$). Among women, experiencing an employment change and perceived financial strain are associated with a 0.39 and 0.91 unit (0.7 percent and 1.7 percent) reduction in PCS in models that enter the adverse labor-market events collectively (the estimates are slightly larger in magnitude when events are entered individually). The problems-with-coworkers variable is never a statistically significant predictor of PCS among women. Considering the practical significance of these findings, perceived financial strain represents about one-ninth (one-eighth) of a standard deviation decrease in the PCS score among males (females). These associations are equivalent to moving a respondent from the

sixty-seventh and sixty-fourth percentiles of the PCS distribution to the fiftieth percentile among men and women, respectively.

In Appendix Table A.2 we re-estimate Equation (1) with all three adverse labor-market events entered collectively and without including person fixed effects. In other words, we ignore the longitudinal feature of our data. Comparing Table 4 and Appendix Table A.2 provides some information on the advantages of longitudinal data, which allows us to circumvent potential bias from time-invariant omitted variables. Results in Appendix Table A.2 are consistent in sign with those reported in Table 4, but are much larger in magnitude and more precisely estimated.

Robustness Checks and Extensions

We next examine how robust our results are to two important sources of potential bias that are not addressed in our person–fixed-effects models; namely, reverse causality (i.e., changes in health may lead to changes in adverse labor-market events) and nonrandom attrition. Indeed, there is a large literature showing that poor health impedes labor-market success (Ettner, Frank, and Kessler 1997; Ettner, Maclean, and French 2011; French, Christopher Roebuck, and Alexandre 2001; Stewart 2001; Zarkin et al. 1998). We explore the potential importance of reverse causality by leveraging the lifetime health information contained in the NESARC. The NESARC has detailed information on chronic physical health conditions and lifetime experiences with mental-health problems. We select what we term a "baseline healthy" sample of workers at Wave I who never met the criteria for any of the chronic physical health conditions[5] nor the American Psychiatric Association (2000) Axis I mental health disorders.[6] Thus, this sample has not experienced any major health shocks by Wave I of the NESARC. Because we structurally force adverse labor-market events to precede negative health shocks in this sample, reverse causality should be minimized. However, a limitation of this robustness check is that it cannot capture subdiagnosable health problems (e.g., individuals who fall just short of the American Psychiatric Association definition of lifetime depression) and therefore is unlikely to fully address reverse causality concerns.

[5] Chronic physical health conditions include hardening of the arteries, high blood pressure/hypertension, cirrhosis of the liver, other liver diseases, chest pain/angina pectoris, rapid heartbeat/tachycardia, heart attack/myocardial infarction, other heart disease, stomach ulcer, gastritis, and arthritis.

[6] Lifetime mental health conditions include depression, mania, dysthymia, hypomania, panic disorder, agoraphobia, social phobia, specific phobia, generalized anxiety, posttraumatic stress disorder, attention deficit disorder, and schizophrenia.

We re-estimate Equation (1) using the baseline healthy sample and report results from specifications that include all three adverse events collectively in Appendix Table A.3. Among both men and women, problems with coworkers and perceived financial strain are again associated with significantly worse mental health, and the magnitudes of the parameter estimates are similar to those reported in Table 4. Although the direction of the relationships between employment changes and MCS is consistent with the results reported in Table 4, the coefficients are generally smaller in magnitude and less precisely estimated.

To provide further evidence on the potential importance of reverse causality, in separate regressions we model Wave II MCS and PCS variables as a function of adverse labor market events measured at Wave I, health at Wave I (MCS in the MCS regression and PCS in the PCS regression), personal characteristics at Wave I, and time-invariant characteristics (race/ethnicity and education). Thus, we again force adverse labor-market events to precede health outcomes. Results from specifications that include all three adverse events collectively are reported in Appendix Table A.4 and are consistent with those reported in Table 4. Although neither of these robustness checks is able to completely address reverse causality concerns, together they suggest that reverse causality is unlikely to fully explain our findings.

A perennial concern with longitudinal data such as the NESARC is nonrandom attrition. Attrition is a concern in the NESARC data as 28.2 percent of male respondents and 29.0 percent female respondents attrited between Waves I and II.[7] Attritors may be inherently different from respondents who complete both surveys in ways that are difficult to observe, and person–fixed-effects models cannot address this source of bias. Nevertheless, we apply NESARC sample weights in all analyses, which are designed to at least partially address attrition patterns. In unreported analysis, we further examine nonrandom attrition by estimating a weighted probit model of attriting between Waves I and II as a function of Wave I health (MCS and PCS), Wave I adverse labor-market events, and other covariates included in Equation (1) measured at Wave I. Wave I MCS is not a statistically significant predictor of the probability of attrition, but Wave I PCS is significant ($p \leq 0.01$). However the magnitude of the PCS association is small (a 1-unit increase in PCS is associated with a 1-percent decrease in the probability of attriting among both men and women). Employment changes and perceived financial strain are not statistically significant predictors of the probability of attrition, but those who experience problems with coworkers are less likely to attrite. Several personal characteristics

[7] These numbers include both respondents who attrited between waves and specific subpopulations not resampled by NESARC administrators in Wave II (e.g., persons living on military bases in Wave I but who returned to the general household population in Wave II).

are significantly associated with the probability of attrition. For example, attritors are older, less likely to have health insurance, and less educated. If those who attrite are more vulnerable to adverse labor-market events then we may be underestimating the true associations.

To empirically explore how nonrandom attrition may bias our findings, in unreported analyses we assign attritors a Wave II health value equal to their Wave I health value plus the mean gender-specific change in MCS and PCS values between Wave I and II among completers who experienced a decline in their health (average MCS decline = –0.47 for men and –0.65 for women; average PCS decline = –0.70 for men and –1.09 for women). In other words, we assume that all attritors experience an identical health decline (equal to the gender-specific sample mean decline) between Waves I and II. We then re-estimate our models separately for men and women with the attritors assigned this lower level of health in Wave II[8] under two different assumptions about attritor adverse labor market events at Wave II: (1) attritors experience no adverse labor-market events at Wave II (i.e., all adverse labor-market event indicators set to zero) and (2) attritors experience all five adverse labor-market events at Wave II (i.e., all adverse labor-market event indicators set to one). Results are highly robust for both men and women, and suggest that nonrandom attrition cannot fully explain our findings.

Discussion

This study investigates the associations between three common and understudied self-assessed adverse labor-market events (problems with coworkers, employment change, and perceived financial strain) and mental and physical health in a sample of working-age Americans. We find that experiencing these events, problems with coworkers and perceived financial strain in particular, are negatively associated with health for men and women. Problems with coworkers, employment change, and financial strain are associated, respectively, with an estimated 3.1 percent (3.3 percent), 0.9 percent (0.2 percent), and 4.5 percent (5.1 percent) reduction in mental health among men (women). Estimated associations are smaller in magnitude and less precise for physical health.

Our study has two important limitations that must be considered when interpreting the findings. First, although we address potential bias from unobservable time-invariant characteristics that may be correlated with adverse

[8] We exclude subjects who attrited between Waves I and II, and did not provide a valid MCS or PCS at Wave I.

labor-market events and health, our models do not account for time-varying unobservable attributes (e.g., lifestyle factors). Second, although we provide suggestive evidence that reverse causality and nonrandom attrition are not important concerns, we cannot definitively rule out these potential sources of bias. Moreover, attrition in the NESARC is nontrivial. Although there is no obvious solution to this data limitation, it must be acknowledged when interpreting our findings.

Unlike studies that investigate common and objective changes in employment outcomes (e.g., job loss, income) our measures are subject to personal interpretation. While subjectivity probably leads to greater heterogeneity, we believe that a worker's perception of his work environment and financial status captures important domains of labor market success that cannot be studied based on objective measures alone. Indeed, our analysis of these self-assessed outcomes offers a complement to studies that investigate more objective measures.

Employers may find our results interesting and useful, as the costs of poor employee health are high. In 2012, the average employer cost of a family health insurance plan was $11,429 (Claxton et al. 2012) and $327 billion in productivity is lost each year to employee health-related problems (Davis et al. 2005). In response to these financial burdens, 94 percent of large employers (five hundred or more employees) that provide health insurance offered some form of wellness program to employees (Kaiser Family Foundation, Health Research and Educational Trust 2012). These programs may be cost beneficial as a recent review suggests that every dollar spent on worksite wellness leads to $3.27 in medical cost savings and $2.73 in absenteeism cost savings (Baicker, Cutler, and Song 2010). Employers may wish to expand these programs to assist employees as they transition into new job responsibilities and/or work hours, and encounter financial strain. Furthermore, employer policies that identify and mitigate employee conflicts may help to improve overall employee health.

These findings are timely as the United States slowly recovers from the 2007 to 2009 recession. In June 2013 the unemployment rate was 7.6 percent (United States Bureau of Labor Statistics 2013). This recession was the largest economic contraction since the Great Depression (National Bureau of Economic Research 2010) and many Americans experienced reduced earnings during this period. Our findings suggest that perceived financial strain is associated with declines in both mental and physical health. If the 2007 to 2009 recession also caused conflict between employees and/or changes in job responsibilities and hours, then this recession may have indirectly led to reductions in mental and physical health. Given that recent research shows the 2007 to 2009 recession led to heightened stress and morbidity (Currie and Tekin 2011; Deaton 2012; McInerney and Nicholas 2013), our findings identify specific mechanisms through which adverse labor market events can impact health.

REFERENCES

American Psychiatric Association. 2000. *Diagnostic and Statistical Manual of Mental Health Disorders, Text Revision (DSM-IV-TR)*. Washington, DC: Author.

Angrist, Joshua D., and Jörn-Steffen Pischke. 2009. *Mostly Harmless Econometrics: An Empiricist's Companion*. Princeton, NJ: Princeton University Press.

Apouey, Bénédicte, and Andrew E. Clark. 2014. "Winning Big But Feeling No Better? The Effect of Lottery Prizes on Physical and Mental Health." *Health Economics*. doi:10.1002/hec.3035.

Artz, Benjamin. 2010. "The Impact of Union Experience on Job Satisfaction." *Industrial Relations* 49(3): 387–405.

Baicker, Katherine, David Cutler, and Zirui Song. 2010. "Workplace Wellness Programs Can Generate Savings." *Health Affairs* 29(2): 304–11.

Balsa, Ana I., Michael T. French, Johanna Catherine Maclean, and Edward C. Norton. 2009. "From Pubs to Scrubs: Alcohol Misuse and Health Care Use." *Health Services Research* 44(5): 1480–503.

Böckerman, Petri, and Pekka Ilmakunnas. 2009. "Job Disamenities, Job Satisfaction, Quit Intentions, and Actual Separations: Putting the Pieces Together." *Industrial Relations* 48(1): 73–96.

Boyce, Christopher J., and Andrew J. Oswald. 2012. "Do People Become Healthier After Being Promoted?" *Health Economics* 21(5): 580–96.

Browning, Martin, Anne Moller Dano, and Eskil Heinesen. 2006. "Job Displacement and Stress-Related Health Outcomes." *Health Economics* 15(10): 1061–75.

Card, David, Alexandre Mas, Enrico Moretti, and Emmanuel Saez. 2012. "Inequality at Work: The Effect of Peer Salaries on Job Satisfaction." *American Economic Review* 102(6): 2981–3003.

Clark, Andrew E., Yannis Georgellis, and Peter Sanfey. 2001. "Scarring: The Psychological Impact of Past Unemployment." *Economica* 68(270): 221–41.

———, Nicolai Kristensen, and Niels Westergård-Nielsen. 2009. "Job Satisfaction and Co-worker Wages: Status or Signal?" *The Economic Journal* 119(536): 430–47.

Claxton, Gary, Matthew Rae, Nirmita Panchal, Anthony Damico, Heidi Whitmore, Kevin Kenward, and Awo Osei-Anto. 2012. "Health Benefits In 2012: Moderate Premium Increases For Employer-Sponsored Plans; Young Adults Gained Coverage Under ACA." *Health Affairs* 31(10): 2324–33.

Currie, Janet, and Erdal Tekin. 2011. "Is the Foreclosure Crisis Making Us Sick?" NBER Working Paper No. 17310. Cambridge, MA: National Bureau of Economic Research.

Davalos, Maria E., and Michael T. French. 2011. "This Recession Is Wearing Me Out! Health-Related Quality of Life and Economic Downturns." *Journal of Mental Health Policy and Economics* 14(2): 61–72.

Davis, Karen, Sara R. Collins, Michelle M. Doty, Alice Ho, and Alyssa L. Holmgren. 2005. *Health and Productivity among U.S. Workers*. New York: The Commonwealth Fund.

Deaton, Angus. 2012. "The Financial Crisis and the Well-Being of Americans." *Oxford Economic Papers* 64(1): 1–26.

Deb, Partha, William T. Gallo, Padmaja Ayyagari, Jason M. Fletcher, and Jody L. Sindelar. 2011. "The Effect of Job Loss on Overweight and Drinking." *Journal of Health Economics* 30(2): 317–27.

Ettner, Susan L. 1996. "New Evidence on the Relationship Between Income and Health." *Journal of Health Economics* 15(1): 67–85.

———, Richard G. Frank, and Roland C. Kessler. 1997. "The Impact of Psychiatric Disorders on Labor Market Outcomes." *Industrial & Labor Relations Review* 51(1): 64–81.

———, Johanna Catherine Maclean, and Michael T. French. 2011. "Does Having a Dysfunctional Personality Hurt Your Career? Axis II Personality Disorders and Labor Market Outcomes." *Industrial Relations* 50(1): 149–73.

Fischer, Justina A. V., and Alfonso Sousa-Poza. 2009. "Does Job Satisfaction Improve the Health of Workers? New Evidence Using Panel Data and Objective Measures of Health." *Health Economics* 18(1): 71–89.

Fletcher, Jason M., Jody L. Sindelar, and Shintaro Yamaguchi. 2011. "Cumulative Effects of Job Characteristics on Health." *Health Economics* 20(5): 553–70.

French, Michael T., M. Christopher Roebuck, and Pierre Kebreau Alexandre. 2001. "Illicit Drug Use, Employment, and Labor Force Participation." *Southern Economic Journal* 68(2): 349–68.

Frijters, Paul, John P. Haisken-DeNew, and Michael A. Shields. 2005. "The Causal Effect of Income on Health: Evidence from German Reunification." *Journal of Health Economics* 24(5): 997–1017.

Gade, Daniel M., and Jeffrey B. Wenger. 2011. "Combat Exposure and Mental Health: The Long-Term Effects among U.S. Vietnam and Gulf War Veterans." *Health Economics* 20(4): 401–16.

Gardner, Jonathan, and Andrew J. Oswald. 2007. "Money and Mental Wellbeing: A Longitudinal Study of Medium-Sized Lottery Wins." *Journal of Health Economics* 26(1): 49–60.

Grant, B. F, K. F. Kaplan, J. Shephard, and T. Moore. 2003. *Source and Accuracy Statement for Wave 1 of the 2001–2002 National Epidemiologic Survey on Alcohol and Related Conditions*. Bethesda, MD: National Institute on Alcohol Abuse and Alcoholism.

Grossman, Michael. 1972. "On the Concept of Health Capital and the Demand for Health." *Journal of Political Economy* 80(2): 223–55.

Jacobson, Louis S., Robert J. LaLonde, and Daniel G. Sullivan. 1993. "Earnings Losses of Displaced Workers." *The American Economic Review* 83(4): 685–709.

Kaiser Family Foundation, Health Research and Educational Trust. 2012. "Employer Health Benefits: 2012 Annual Survey." Menlo Park, CA: Kaiser Family Foundation.

Kelly, Rashad, Dhaval Dave Inas, J. Sindelar, and William T. Gallo. 2014. "The Impact of Early Occupational Choice On Health Behaviors." *Review of Economics of the Household* 12(4): 737–70.

Kim, Beomsoo, and Christopher J. Ruhm. 2012. "Inheritances, Health and Death." *Health Economics* 21(2): 127–44.

Kosteas, Vasilios D.. 2011. "Job Satisfaction and Promotions." *Industrial Relations* 50(1): 174–94.

Lakdawalla, Darius, and Tomas Philipson. 2007. "Labor Supply and Weight." *Journal of Human Resources* 42(1): 85–116.

Lindahl, Mikael. 2005. "Estimating the Effect of Income on Health and Mortality Using Lottery Prizes as an Exogenous Source of Variation in Income." *Journal of Human Resources* 40(1): 144–68.

Morefield, G. Brant, David C. Ribar, and Christopher H. Ruhm. 2012. "Occupational Status and Health Transitions." *The B.E. Journal of Economic Policy and Analysis* 11(3): 1–8.

McInerney, Melissa, and Jennifer M. Mellor. 2012. "Recessions and Seniors' Health, Health Behaviors, and Healthcare Use: Analysis of the Medicare Current Beneficiary Survey." *Journal of Health Economics* 31(5): 744–51.

———, and Lauren Hersch Nicholas. 2013. "Recession Depression: Mental Health Effects of the 2008 Stock Market Crash." *Journal of Health Economics* 32(6): 1090–144.

Mullahy, John, and Jody L. Sindelar. 1996. "Employment, Unemployment, and Problem Drinking." *Journal of Health Economics* 15(4): 409–34.

National Bureau of Economic Research. 2010. "U.S. Business Cycle Expansions and Contractions." Cambridge, MA: Author.

Rablen, Matthew D., and Andrew J. Oswald. 2008. "Mortality and Immortality: The Nobel Prize as an Experiment into the Effect of Status Upon Longevity." *Journal of Health Economics* 27(6): 1462–71.

Roberts, Jennifer, Robert Hodgson, and Paul Dolan. 2011. "It's Driving Her Mad": Gender Differences in the Effects of Commuting on Psychological Health." *Journal of Health Economics* 30(5): 1064–76.

Roelfs, David J., E. Shor, KW. Davidson, and JE. Schwartz. 2011. "Losing Life and Livelihood: A Systematic Review and Meta-analysis of Unemployment and All-Cause Mortality." *Social Science & Medicine* 72(6): 840–54.

Snyder, Stephen E., and William N. Evans. 2006. "The Effect of Income on Mortality: Evidence from the Social Security Notch." *The Review of Economics and Statistics* 88(3): 482–95.

Stewart, Jennifer M. 2001. "The Impact of Health Status on the Duration of Unemployment Spells and the Implications for Studies of the Impact of Unemployment on Health Status." *Journal of Health Economics* 20(5): 781–96.

Strully, Kate W. 2009. "Job Loss and Health in the U.S. Labor Market." *Demography* 46(2): 221–46.

Sullivan, Daniel, and Till von Wachter. 2009. "Job Displacement and Mortality: An Analysis Using Administrative Data." *Quarterly Journal of Economics* 124(3): 1265–306.

United States Bureau of Labor Statistics. 2013. *The Employment Situation—June 2013*. Washington, DC: Author.

Ware, John E., Mark Kosinski, Diane M. Turner-Bowker, and Barbara Gandek. 2002. *How to Score Version 2 of the SF-12 Health Survey*. Lincoln, RI: Quality Metrics.

Zarkin, Gary A., Thomas A. Mroz, Jeremy W. Bray, and Michael T. French. 1998. "The Relationship Between Drug Use and Labour Supply for Young Men." *Labour Economics* 5(4): 385–409.

Zimmerman, Frederick J., and Wayne Katon. 2005. "Socioeconomic Status, Depression Disparities, and Financial Strain: What Lies Behind the Income-Depression Relationship?" *Health Economics* 14(12): 1197–215.

APPENDIX

TABLE 1

SF12 SURVEY QUESTIONS

Number	Question Wording
1	*In general, would you say your health is . . .* Excellent, very good, good, fair, or poor? *The following items are activities you might do during a typical day. Does your health limit you in these activities?* Yes, limited a lot; yes, limited a little; or no, not limited at all.
2	. . . Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling or playing golf?
3	. . . Climbing several flights of stairs? *During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of your physical health?* Yes, no.
4	. . . Accomplished less than you would like?
5	. . . Were limited in the kind of work or other activities? *During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)? (Please answer YES or NO for each question.)*
6	. . . Accomplished less than you would like?
7	. . . Didn't do work or other activities as carefully as usual?
8	*During the past 4 weeks, how much did pain interfere with your normal work (including both work outside of the home and housework)?* Not at all, a little bit, moderately, quite a bit, or extremely. *The next questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling. How often during the past 4 weeks. . .* All of the time, most of the time, a good bit of the time, some of the time, a little of the time, or none of the time.
9	. . . Have you felt calm and peaceful?
10	. . . Did you have a lot of energy?
11	. . . Have you felt down-hearted and blue?
12	*During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting with friends, relatives, etc.)?* All of the time, most of the time, a good bit of the time, some of the time, a little of the time, or none of the time.

APPENDIX

TABLE 2

SELECTED REGRESSION RESULTS FOR ADVERSE LABOR-MARKET EVENTS AND HEALTH: NO PERSON FIXED EFFECTS

	Men (*N*=15,086)	Women (*N*=15,922)
Outcome: Mental component score		
Sample mean	53.91 (SD=6.46)	51.89 (SD=7.37)
Problems with coworkers	–3.610***	–3.707***
	(0.274)	(0.297)
Employment change	–1.042***	–0.809***
	(0.175)	(0.194)
Financial strain	–3.730***	–4.692***
	(0.359)	(0.321)
Outcome: Physical component score		
Sample mean	53.91 (SD=6.46)	53.54 (SD=6.74)
Problems with coworkers	–0.991***	–0.465*
	(0.263)	(0.263)
Employment change	–0.368**	–0.423**
	(0.166)	(0.184)
Financial strain	–1.891***	–2.653***
	(0.303)	(0.324)

NOTES: All models estimated with linear regression, and are weighted with the NESARC survey weights and control for control for age, household income, fired or laid-off, marital status (divorced/separated, widowed, and never married, with married or living as married as the omitted category), an indicator for a child under age 18 in the household, an indicator for any health insurance, and survey wave fixed effects. Standard errors are reported in parentheses and clustered at the individual level.

*** $p \leq 0.01$; ** $p \leq 0.05$; * $p \leq 0.10$.

APPENDIX

TABLE 3

SELECTED FIXED EFFECTS REGRESSION RESULTS FOR ADVERSE LABOR-MARKET EVENTS AND HEALTH: BASELINE HEALTHY SAMPLE

	Men (*N*=10,015)	Women (*N*=8652)
Outcome: Mental component score		
Sample mean	54.35 (SD=7.09)	52.28 (SD=8.18)
Problems with coworkers	–1.700***	–1.799***
	(0.511)	(0.550)
Employment change	-0.111	–0.454
	(0.292)	(0.337)
Financial strain	–1.978***	–2.655***
	(0.509)	(0.550)

TABLE 3 (cont.)

	Men (*N*=10,015)	Women (*N*=8652)
	Outcome: Physical component score	
Sample mean	54.92 (SD=5.61)	54.75 (SD=6.28)
Problems with coworkers	0.544	1.078***
	(0.405)	(0.387)
Employment change	0.230	–0.610**
	(0.219)	(0.275)
Financial strain	–0.958**	0.155
	(0.442)	(0.545)

NOTES: Baseline healthy sample includes respondents who do not report any chronic conditions or meet American Psychiatric Association (2000) Axis I clinical conditions. All models estimated with fixed-effects linear regression, and are weighted with the NESARC survey weights and control for age, household income, fired or laid off, marital status (divorced/separated, widowed, and never married, with married or living as married as the omitted category), an indicator for a child under age 18 in the household, an indicator for any health insurance, and survey wave fixed effects. Standard errors are reported in parentheses and clustered at the individual level. *** $p \leq 0.01$; ** $p \leq 0.05$.

APPENDIX

TABLE 4

SELECTED FIXED EFFECTS REGRESSION RESULTS FOR ADVERSE LABOR-MARKET EVENTS AND HEALTH: MODELING WAVE II HEALTH OUTCOMES AS A FUNCTION OF WAVE I ADVERSE LABOR-MARKET EVENTS

	Men (*N*=7545)	Women (*N*=7961)
	Outcome: Mental component score	
Sample mean	53.56 (SD=7.53)	51.25 (SD=8.80)
Problems with coworkers	–1.533***	–1.564***
	(0.360)	(0.386)
Employment change	–0.0215	0.132
	(0.248)	(0.265)
Financial strain	–1.200***	–1.712***
	(0.381)	(0.442)
	Outcome: Physical component score	
Sample mean	53.70 (SD=6.66)	53.02 (SD=7.67)
Problems with coworkers	–0.847***	–0.750**
	(0.299)	(0.298)
Employment change	–0.368*	–0.0898
	(0.220)	(0.229)
Financial strain	–0.530	–0.482
	(0.357)	(0.387)

NOTES: All models estimated with fixed effects linear regression, and are weighted with the NESARC survey weights and control for health outcomes (either MCS for the MCS regression or PCS for the PCS regression) measured at Wave II; age, household income, fired or laid off, marital status (divorced/separated, widowed, and never married, with married or living as married as the omitted category), an indicator for a child under age 18 in the household, an indicator for any health insurance, race/ethnicity indicators (African American, Asian, American Indian, and Hispanic with white race as the omitted category), education indicators (high school, some college, college graduate, and postgraduate with less than high school as the omitted category) measured at Wave I; and survey wave fixed effects. Standard errors are reported in parentheses and clustered at the individual level.

*** $p \leq 0.01$; ** $p \leq 0.05$; * $p \leq 0.10$.