Population Association of America
Annual Meeting 2012

Title: Job loss and health: A longitudinal analysis of job transitions among US workers 2004-2009

Authors: Berdahl, Terceira A. and Lan Liang, Agency for Healthcare Research & Quality

Extended Abstract:

Introduction

Research and policy interest on the consequences of job loss for workers in the U.S. has increased in recent years. Most research on the health impact of job loss has used older data or data focused on one organization, plant or labor market. In order to assess the health impact of job loss during times of increasing economic uncertainty, our study explores the physical and mental health toll that job transitions take on individual workers by analyzing nationally representative data from the Medical Expenditure Panel Survey. In this study, we investigate the health effects of job loss by providing a longitudinal analysis of job transitions over a two-year period using nationally representative data from the Medical Expenditure Panel Survey. Pooling data from Panel 9 to Panel 13 (2004-2009), we analyze the effects of job transitions across several categories of involuntary job loss including lay-offs, business closings/restructuring, and temporary contracts. It is important to analyze different types of job loss separately, as health-related selection effects (for example, less healthy workers may be let go more often due to lower productivity) are probably stronger for fired or laid-off workers compared to workers at businesses with total shutdowns (plant closings). By using longitudinal data, we are able to model subsequent changes in self-reported physical and mental health while controlling for initial health status. Additionally, our study includes data from the full spectrum of occupations as the negative effects of job loss could vary across job types. We also include a comprehensive set of job and occupational characteristics.

Background

Several sociological and economic theories suggest the job loss can have a causal negative effect on health. From a social stratification perspective, jobs preserve and confer social status, prestige, social capital, power, wages, and health insurance (Blau & Duncan 1968). Losing a job therefore can reduce health by loss of status, prestige, power, economic resources, and health care access (Krueger & Burgard 2010).

Occupations are collections of similar jobs and the most often tracked work unit available in health surveys in the United States. Occupations confer the actual job/work environment and are most often aspired to and achieved through educational credentials, experience and work effort (Hauser & Warren 1997). Occupations place individuals in a hierarchy of jobs, which has subsequent effects on wages (Mouw & Kalleberg 2010) and health. Because of the centrality of occupational position, we control for occupational category and include the full spectrum of occupations in our analysis. Moreover, we include a set of job characteristic control variables to

further control for characteristics of the job that could explain the association between job transitions and health.

Alternatively, the causal relationship between job loss and health could be spurious. If health selection is operating, then workers who were unhealthy to begin with are more likely to lose their jobs, perhaps because of their lower health status and employer's judgment of their lower productivity. We address health selection in several ways. First, we define types of voluntary and involuntary job loss, including an illness-related job loss category to control for health selection. This variable also captures differential vulnerability to job loss among the less healthy. Second, we use longitudinal data on individuals and control for individual health status before the job change. Thus, we are examining what happens to individual health following job changes, which establishes a clear time-order of events.

Methods

Data on individuals' self-reported physical and mental health status and job characteristics come from the Medical Expenditure Panel Surveys (MEPS), sponsored by the Agency for Healthcare Research and Quality. MEPS is a series of surveys based on clustered and stratified samples of households that provide nationally representative estimates of healthcare use, expenditures, and insurance coverage for the U.S. non-institutionalized population (Cohen, Monheit & Beauregard 1996). The survey also contains a rich set of data on social and demographic characteristics of that population, including detailed occupation categories. For this study, we include individuals who were employed in the first round they were surveyed and between the ages of 25 and 64. We capture job losses that occur to individuals' current/main jobs. Our models do not capture job changes in secondary jobs.

Job Transitions. Job transitions between round 1 and round 5 are captured with a set of 5 dichotomous variables capturing each type of transition. Layoff, Job ending, Illness-related job loss, quits, and other job loss are each coded "1" if the worker experienced this type of job loss between the first and fifth round of the survey and "0" if they did not. Workers who remain continuously employed are the reference group for the regression models.

Job characteristics. Hourly wage and hours usually worked per week are included in our model. We also include dichotomous variables capturing whether or not the job is union, temporary, or seasonal. We control for the number of employees in the work establishment and whether or not the individual holds multiple jobs (the analysis of job loss pertains only to current/main jobs).

Demographic control variables. We include race-ethnicity-gender, individual education, age, marital status, health status at round 1 in the model.

Preliminary Findings

Descriptive Findings

Results show that during the 2004-2009 period, 29% of employed workers reported changing jobs during the observation period. Of those workers who changed jobs, 79% reported

only one change during the observation period (18% reported 2, 3% reported 3). The most common type of job transition was quits (46%), followed by retirement or unpaid leave (25%), layoff/closings (19%), job ending (10%) and illness/injury (6%). Our preliminary results suggest that job loss affects both physical and mental health negatively.

We report descriptive statistics on occupational category and job loss type in Table 1. Layoffs were most common for workers in construction (7.9%) and production (7.5%) and lowest for professional (3.3%) and managers (4.6%). Job ending (temporary/seasonal) was most common for farm workers (6.4%). The most common transitions were quits, and sales (18%) and service (15.5%) workers reported the most quits.

Multivariate Findings

We include preliminary findings from two sets of logistic regression models predicting 1) the odds of poor self-rated physical health and 2) the odds of poor self-rated mental health among currently employed adults. These preliminary models provide evidence that occupation-level demographic variables are significant predictors of both health outcomes, although the patterns of associations are unique for each outcome.

The odds ratios in Table 2 portray the associations between job loss (Model 1), occupation (Model 2), job characteristics (Model 3), and (Model 4) individual-level education. In model 1, we find that all job loss categories are associated with worse health at time 2, with the exception of quits. Being laid off (OR=1.616, $p<.01$), job ending (1.766, $p<.01$) and illness-related job loss categories are all associated with increased odds of reporting fair/poor health, but the largest OR is observed for illness-related job loss (OR=8.195, $p<.01$). After controlling for occupation and demographic control variables (model 2) we find that these patterns persist, with slightly weaker effects (smaller OR values). In Model 3 we include job characteristics, with little change in the pattern of associations for job loss categories. Finally, in Model 4 we include education. In all of the models, job loss categories other than quits are significantly associated with worse health. The only category of truly voluntary job change, quits, was not associated with health declines.

We examine the same set of models predicting self-rated mental health in Table 3. Although mental health at baseline is associated with later mental health, the effect is smaller compared to our models predicting physical health. The pattern of odds ratios for job loss categories is similar for mental health. Illness-related job separations are associated with the greatest increase in the odds of reporting fair/poor mental health (OR=7.482, $p<.01$). Layoffs (OR=1.922, $p<.01$), job ending (OR=1.481, $p<.05$) and other job loss (OR=1.856, $p<.01$) were all associated with worse mental health. Quitting a job was not statistically significantly associated with the mental health.

The main finding that losing a job (compared to remaining continuously employed) results in worse self-rated physical and mental health is robust to a large and comprehensive set

of controls including occupation, job characteristic, education and demographic characteristics. Our findings are similar to prior work on job loss and health in the 1980s and 1990s (Burgard, Brand & House 2007), although we find stronger effects and significant effects for both mental and physical health outcomes. Our models use longitudinal data on individuals and show a strong effect of involuntary job loss on multiple health outcomes. While voluntary job transitions are not associated with health, when workers involuntarily lose their jobs, they experience health declines. We also found evidence of health selection, and the most harmful health losses occur for those who are vulnerable to health problems to begin with (worse health at time 1 and losing the job because of poor health). Job loss puts additional stress on individuals who are ill at a time when they would benefit most from employment (through health insurance, income, social support, for example).

References

Blau, P. M. and O. D. Duncan. 1967. The *American Occupational Structure*. New York: Wiley.

Burgard, Sarah A., Jennie E. Brand and James S. House. 2007. "Toward a better estimation of the effect of job loss on health." *Journal of Health and Social Behavior* 48:4(369).

Cohen J, Monheit A, Beauregard K. 1996. "The Medical Expenditure Panel Survey: A national health information resource." *Inquiry* 33(373-89).

Hauser, R. M. and J. R. Warren. 1997. "Socioeconomic indexes for occupations: A review, update, and critique." *Sociological Methodology* 27: 177-298.

Krueger, Patrick M., and Sarah Burgard. "Work, Occupation, Income, and Mortality." Pp.263-288 in *International Handbook of Adult Mortality,* edited by Richard G. Rogers andEileen M. Crimmins. New York: Springer.

Mouw, Ted. and Arne L. Kalleberg. 2010. "Occupations and the Structure of Wage Inequality in the United States, 1980s to 2000s" *American Sociological Review* 75:3(402-431).

Table 1: Type of job transition by broad occupational type[1]

	Layoff		Job ended		Illness related		Quit		Other	
	Proportion	SE[2]	Proportion	SE	Proportion	SE	Proportion	SE	Proportion	SE
Manager	.046	.004	.019	.003	.010	.002	.110	.007	.057	.005
Professional	.033	.003	.025	.003	.009	.002	.130	.006	.054	.004
Service	.049	.005	.033	.004	.024	.003	.155	.008	.084	.006
Sales	.061	.007	.022	.004	.011	.002	.180	.011	.083	.008
Admin	.061	.005	.030	.004	.014	.003	.143	.008	.081	.006
Farming	.061	.025	.064	.019	.019	.009	.131	.034	.094	.026
Construction	.079	.007	.048	.006	.024	.005	.126	.008	.071	.007
Production	.075	.005	.028	.003	.028	.004	.114	.007	.083	.006
Unclassified	.056	.019	.061	.017	.021	.009	.138	.032	.069	.025

[1]Medical Expenditure Panel Survey Panel Files 2004-2009.
[2]Standard errors in second column.

Table 2: Logistic regression models predicting the odds of reporting fair/poor self-rated health[1]

	Model 1		Model 2[2]		Model 3		Model 4	
	OR	SE	OR	SE	OR	SE	OR	SE
Poor health (time 1)	9.968***	.706	9.139***	.670	8.655***	.718	8.459***	.700
Job transition (no transitions=reference group)								
Layoff	1.616***	.207	1.626***	.209	1.695***	.236	1.675***	.232
Job ended	1.766***	.258	1.793***	.268	1.731**	.297	1.719**	.295
Illness-job loss	8.195***	1.423	7.760***	1.326	7.364***	1.484	7.224***	1.453
Quit	.824	.087	.944	.103	.902	.107	.907	.109
Other job loss	1.659***	.183	1.596***	.174	1.417**	.176	1.414**	.176
Occupation (manager=reference)								
Professional			1.354*	.160	1.225	.179	1.307	.194
Service			1.970***	.249	1.662**	.270	1.503*	.246
Sales			1.625**	.240	1.407	.269	1.295	.245
Admin			1.530***	.194	1.218	.190	1.119	.177
Farming			1.961*	.527	1.367	.471	1.198	.413
Construction			1.758***	.265	1.481*	.279	1.301	.250
Production			1.737***	.218	1.421*	.221	1.255	.200
Missing occupation			1.198	.479	1.689	1.071	1.580	.985
Multijob					.695*	.099	.708*	.102
Hourly wage					.979***	.003	.981***	.004
Hours per week					.999	.003	1.000	.003
Temporary					1.183	.250	1.202	.256
Seasonal					1.127	.226	1.127	.227
Number emp.					1.000	.000	1.000	.000
Union					1.112	.112	1.115	.112
Education (No HS=reference								
HS degree							.964	.091
BA degree							.810	.094
Prof degree							.541**	.109

Exponentiated coefficients; Standard errors in second column.

* $p < .05$, ** $p < .01$, *** $p < .001$.

[1]Medical Expenditure Panel Survey Panel Files 2004-2009.

[2]Models 2-4 control for age, marital status, and race-ethnicity-gender.

Table 3: Logistic regression models predicting the odds of fair/poor self-reported mental health[1]

	Model 1		Model 2[2]		Model 3		Model 4	
	OR	SE	OR	SE	OR	SE	OR	SE
Poor mental health (time 1)	1.89***	1.220	1.91***	1.222	1.86***	1.371	1.83***	1.383
Job transition (no transitions=reference group)								
Layoff	1.922***	.352	1.949***	.356	1.877***	.327	1.863***	.322
Job ended	1.481*	.291	1.578*	.308	1.358	.319	1.362	.318
Illness-job loss	7.482***	1.356	7.308***	1.347	6.877***	1.512	6.839***	1.506
Quit	1.038	.126	1.115	.141	1.064	.148	1.063	.148
Other job loss	1.856***	.238	1.804***	.236	1.624***	.234	1.626***	.234
Occupation (manager=reference group)								
Professional			1.157	.185	1.230	.235	1.279	.245
Service			1.401*	.213	1.282	.255	1.192	.243
Sales			1.403	.271	1.598*	.361	1.505	.346
Admin			1.459*	.253	1.496*	.300	1.391	.286
Farming			1.476	.648	1.533	.844	1.473	.825
Construction			1.626*	.308	1.557	.374	1.413	.346
Production			1.714***	.266	1.606*	.309	1.461	.292
Missing occupation			1.189	.645	2.668	1.875	2.556	1.756
Multijob					.799	.129	.811	.131
Hourly wage					.991	.004	.993	.004
Hours per week					.992	.004	.992	.004
Temporary					.836	.208	.841	.209
Seasonal					1.609	.408	1.622	.414
Number emp.					1.000	.000	1.000	.000
Union					1.065	.137	1.057	.136
Education (No HS=reference group)								
HS degree							1.139	.136
BA degree							.853	.115
Prof degree							.867	.212

Exponentiated coefficients; Standard errors in second column.

* $p < .05$, ** $p < .01$, *** $p < .001$.

[1]Medical Expenditure Panel Survey Panel Files 2004-2009.

[2]Models 2-4 control for age, marital status, and race-ethnicity-gender.