Individual and spousal unemployment as predictors of smoking and drinking behavior

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ABSTRACT

The effects of unemployment on health behaviors, and substance use in particular, is still unclear despite substantial existing research. This study aimed to assess the effects of individual and spousal unemployment on smoking and alcohol consumption. The study was based on eight waves of geocoded Framingham Heart Study Offspring Cohort data (US) from 1971 to 2008 that contained social network information. We fit three series of models to assess whether lagged 1) unemployment, and 2) spousal unemployment predicted odds of being a current smoker or drinks consumed per week, adjusting for a range of socioeconomic and demographic covariates. Compared with employment, unemployment was associated with nearly twice the subsequent odds of smoking, and with increased cigarette consumption among male, but not female, smokers. In contrast, unemployment predicted a one drink reduction in weekly alcohol consumption, though effects varied according to intensity of consumption, and appeared stronger among women. While spousal unemployment had no effect on substance use behaviors among men, wives responded to husbands' unemployment by reducing their alcohol consumption. We conclude that individual, and among women, spousal unemployment predicted changes in substance use behaviors, and that the direction of the change was substance-dependent. Complex interactions among employment status, sex, and intensity and type of consumption appear to be at play and should be investigated further.

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The Great Recession of 2007–2009 cost the US economy an estimated 8.4 million jobs (Katz, 2010). Since the recession, historically high unemployment has persisted, with 10–15 million people seeking work in any given month between 2010–2013 (Bureau of Labor Statistics (2014)). Globally, unemployment increased by 30 million people between 2007 and 2010, bringing the total unemployed population to 210 million worldwide (International Monetary Fund, 2010).

The magnitude of the ongoing unemployment crisis underscores the importance of understanding how unemployment rates affect health and health behaviors (Brenner, 2005; McKee-Ryan et al., 2005; Ruhm, 2005a,b; Ruhm, 2009). As leading risk factors for global disease burden, smoking and alcohol consumption are of particular interest (Lim et al., 2013). Despite a substantial body of research, however, there is controversy over whether unemployment inhibits or promotes consumption of these substances (Henkel, 2011). This analysis uses data collected over several recessionary periods, between 1971 and 2008, to examine the effects of unemployment on substance use behaviors.

Previous papers have outlined competing hypotheses asserting that unemployment could protect against tobacco and alcohol consumption, on one hand, or that it might promote use of these substances, on the other (Davalos and French, 2011; Ettner, 1997; Henkel, 2011; Pacula, 2011; Ruhm, 1995; Ruhm and Black, 2002).

In making arguments that unemployment inhibits smoking and drinking, economists conceptualize cigarettes and alcohol as "normal goods": products for which demand falls when income falls, as in the case of unemployment (Ruhm, 1995; Ruhm, 2000), and spousal unemployment, to the extent that household finances are shared. Individual unemployment is also expected to reduce substance use by eliminating exposure to job strain and workplace

stressors that motivate employees to smoke and drink (Lamontagne, 2012; Ruhm and Black, 2002). To the extent that coworkers attend happy hours or office parties together, unemployment could reduce opportunities for substance use (Davalos and French, 2011).

In support of the latter argument that unemployment might promote smoking and drinking, job loss and long term unemployment are well-known stressors (Dooley et al., 1996; McKee-Ryan et al., 2005) that could trigger coping via substance use (Harris and Edlund, 2005). With more leisure time, the unemployed might also increase the amount they smoke or drink simply because there are more opportunities to do so, and fewer consequences of impairment, without work commitments. Spousal unemployment could likewise promote stress-related substance use among the employed by increasing pressure to provide steady financial support, reducing perceived job security, and via emotional contagion (Fowler and Christakis, 2008; Hatfield et al., 1994; Howes et al., 1985).

Empirical studies on how unemployment affects individuals' health show mixed findings. A literature review by Henkel in 2011 summarizes the strongest research on individual unemployment and substance use conducted in recent years. The review included studies published between 1990 and 2010 that relied on longitudinal data or instrumental variable analysis of cross-sectional data, and controlled for known individual confounders such as education and substance use history (Henkel, 2011). Overall, the literature supported the hypothesis that job loss and unemployment were risk factors for substance use on the individual level. Despite some null findings (Chandola et al., 2004), a majority of studies that examined unemployment and smoking found that job loss increased the risk of relapse after cessation (Falba et al., 2005), odds of starting smoking, (Hammarström and Janlert, 1994) and smoking intensity (Falba et al., 2005; Hammarström and Janlert, 1994), while it decreased odds of cessation (Rose et al., 1996; Weden et al., 2006).

The association between unemployment and alcohol consumption was more complex. Of 14 studies reviewed, 9 suggested that unemployment is a risk factor for alcohol abuse and increased alcohol consumption, 3 were null, and 2 showed mixed findings (Henkel, 2011). The two studies with mixed findings highlight interesting complexity in how unemployment affects drinking behavior. First, it appeared that while unemployment increased the risk of taking up drinking, it was not associated with the number of drinks consumed per day (Gallo et al., 2001). Second, unemployment was positively associated with alcohol consumption overall, but negatively associated with alcohol dependence symptoms (Ettner, 1997). One proposed explanation is that heavy drinkers may decrease consumption when they become unemployed, while less intensive users increase consumption.

Other studies have also shown support for the hypothesis that the effects of unemployment on drinking vary according to whether the subject is a heavy or light drinker. For example, a study of Health and Retirement Survey participants found that increases in drinking among those laid off after plant closures were largely driven by heavy drinkers (Deb et al., 2011). Related research has found that heavy drinkers are less responsive to alcohol price increase than are light or moderate drinkers (Manning et al., 1995), providing a potential mechanism differentiating heavy and light drinkers' response to unemployment.

This analysis uses longitudinal data on alcohol consumption, smoking behavior, and employment status at eight waves to explore associations between unemployment and substance use behaviors. In sensitivity analyses, we control for neighborhoods because area-level socioeconomic factors are potential confounders of the relationship between individual employment and substance use, and to account for statistical dependence among observations from the same local areas. Likewise, baseline substance use predicts future employment outcomes (Henkel, 2011), and through this pathway, may also affect choice of neighborhood.

We also examine associations between spousal unemployment and smoking and drinking behavior, a question that has not been addressed previously despite evidence that spousal unemployment may be a risk factor for emotional distress (Røsand et al., 2012). Further, testing spousal employment status as risk factor for substance use allows us to better understand mechanisms linking unemployment and substance use in general.

1. Methods

1.1. Data

The Framingham Heart Study (FHS) Offspring Cohort was initiated in 1971 with 5124 subjects. It comprises children of the FHS Original Cohort and the spouses of these children (Feinleib et al., 1975). Subjects have completed eight waves of surveys and medical exams, conducted approximately every four years, to date. This analysis utilized all eight waves of exams (1971–2008), which were centered in 1973, 1981, 1985, 1989, 1992, 1997, 1999, and 2005.

1.2. Ascertainment of social ties

FHS Offspring participants served as both "egos", or participants on whose outcomes the analysis was focused, and "alters", or the spouses of the egos. Because the Offspring Cohort was designed to include all participants' spouses, 83% of subjects with a spouse had that spouse in the network and providing data to the study.

1.3. Outcome

Smoking status was self-reported at each wave, and was coded as a binary variable equal to one if the subject reported smoking one or more cigarettes per day in the year leading up to the exam, and zero if the subject reported smoking no cigarettes per day in the year leading up to the exam. In sensitivity analyses, we examined the number of cigarettes smoked per day by smokers, which was also recorded at each wave.

We used self-reported number of drinks per week as our main measure of alcohol consumption. We also characterized each participant as exhibiting low- or high-risk alcohol-related behavior for sensitivity analyses. Consuming fewer than 8 and 15 drinks per week was considered low-risk behavior for women and men, respectively, while consuming those amounts or more was considered high-risk (Dawson, 2000).

1.4. Exposure

Participants reported their employment status at each wave. Responses were categorized as employed, unemployed, student, housewife, or retired. For the analysis of spousal unemployment, spouses were categorized as employed, unemployed, or not in the labor force (i.e., retirees, students, and homemakers). We used lagged employment status, which corresponded to the previous wave's employment category, as our main measures of exposure. We also created a binary variable denoting job loss that was coded affirmatively if the subject was unemployed in the current wave but had been employed in the previous wave. Both job loss and current employment status served as exposure measures in sensitivity analyses.