



The effect of unemployment on the mental health of spouses – Evidence from plant closures in Germany[☆]



Jan Marcus*

Mohrenstraße 58, DIW Berlin, 10117 Berlin, Germany

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ABSTRACT

Studies on health effects of unemployment usually neglect spillover effects on spouses. This study specifically investigates the effect of an individual's unemployment on the mental health of their spouse. In order to allow for causal interpretation of the estimates, it focuses on plant closure as entry into unemployment, and combines difference-in-difference and matching based on entropy balancing to provide robustness against observable and time-invariant unobservable heterogeneity. Using German Socio-Economic Panel Study data the paper reveals that unemployment decreases the mental health of spouses almost as much as for the directly affected individuals. The findings highlight that previous studies underestimate the public health costs of unemployment as they do not account for the potential consequences for spouses.

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1. Introduction

Apart from income, employment has many non-financial benefits, such as structured time, social status and identity, social contact, collective purpose, as well as activity (Jahoda, 1979). Unemployment results in the loss of the pecuniary and non-pecuniary work benefits, and these losses also impact other household members. Spouses of newly unemployed individuals have to cope with reduced household income, a presumably more depressed partner, the partner's unfamiliar presence at home as well as a reduced social status. For spouses, too, these negative consequences of unemployment might result in depressive symptoms and other mental health issues.

Yet, while there is a whole branch of literature on the health implications of job loss and unemployment for those individuals directly affected (see e.g. Browning et al., 2006; Brand et al., 2008; Eliason and Storrie, 2009; Kuhn et al., 2009; Salm, 2009; Sullivan and von Wachter, 2009; Deb et al., 2011; Schmitz, 2011; Browning and Heinesen, 2012; Marcus, 2012), few studies address the impact on their spouses. Not considering the potential negative externalities on spouses might result in underestimating the public health costs of job loss (e.g. Kuhn et al., 2009). This study contributes to our understanding of spillover effects of unemployment on other household members by estimating the effect of unemployment on the spouse's mental health. In order to give the estimates a causal interpretation, this study applies a combination of matching and difference-in-difference that is robust against selection on observables and selection on unobservables with time-invariant effects. The matching part of the estimator constitutes one of the first applications of entropy balancing (Hainmueller, 2012), which balances the conditioning variables more effectively than common propensity score methods. Furthermore, this study considers only unemployment resulting from plant closures. Other causes of unemployment might result from mental health issues and, hence, might be endogenous.

Using German Socio-Economic Panel Study (SOEP) data from 2002 through 2010, this paper finds that the unemployment of one

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* Tel.: +49 3089789308.

E-mail address: jmarcus@diw.de

spouse¹ similarly affects the mental health of both spouses. About one year after plant closure, unemployment decreased mental health by 27% of a standard deviation for unemployed individuals themselves and by 18% of a standard deviation for their spouses. In general, the decreases in mental health are larger when the male spouse enters unemployment. The results are robust over various matching specifications. Furthermore, this paper shows that changes in mental health do not differ between treated and matched controls before the plant closure, adding additional credibility to the identification assumption. Analyzing other reasons for unemployment and not just that connected to plant closures confirms the finding that unemployment decreases the mental health for spouses almost as much as for directly affected individuals. However, the effects for other reasons of unemployment are not larger than for unemployment due to plant closure, suggesting that selection issues with respect to entering unemployment might be less important than previously thought.

The structure of this paper is as follows. The next section discusses related literature in greater detail, Section 3 illustrates the estimation strategy, Section 4 introduces the data, describes the construction of treatment and control group, and provides descriptive statistics. The main results are presented in Section 5, while Section 6 performs further analyses. Section 7 concludes.

2. Related literature

The literature on the consequences of unemployment is closely related to the literature on the consequences of job loss – especially when the focus is on the identification of causal effects. In the following, I discuss these two branches of literature together, bearing in mind that not all individuals who lose their jobs are unemployed afterwards and not every individual in the state of unemployment experienced the event of an involuntary job loss. Previous studies provide some evidence for spillover effects of job loss and unemployment on other household members. For instance, Winkelmann and Winkelmann (1995) report decreases in subjective well-being following the partners' unemployment (without differencing between the reasons for unemployment). Stephens (2002), using U.S. Panel Study of Income Dynamics (PSID) data, provides evidence for the “added worker effect”, that women increase their labor supply due to their husbands' job losses resulting from lay-offs or plant closures. Again with PSID data, Charles and Stephens (2004) show that job loss resulting from lay-off or plant closure increases the probability of divorce. Other studies indicate that children are also affected by their parents' loss of employment. For instance, using SOEP data, Siedler (2011) finds that experiencing parental unemployment (for any reason) increases the probability of children to support extreme right-wing parties. With data from the PSID, Lindo (2011) provides evidence for a reduction in children's birth weight following a father's experience of plant closing. This already indicates that the public health costs of job loss are underestimated if spillover effects on other household members are not taken into account.² Taken together, the findings on spillover effects on other household members lead to the expectation of negative consequences of unemployment for the spouse's mental health.

Few studies explicitly analyze the causal relationship between unemployment and the partner's mental health. Most of these

studies focus on single plants or small geographic areas (e.g. Liem and Liem, 1988; Penkower et al., 1988; Dew et al., 1992).³ To my knowledge only two studies use nationally representative data in this context (Clark, 2003; Siegel et al., 2003). However, both studies do not take into account the endogeneity of the treatment. Drawing on data from the British Household Panel Study, Clark (2003) finds partner's unemployment to reduce mental health, but less so if the respondent is already unemployed. Yet, this study does not differentiate between the reasons for unemployment. With data from the U.S. Health and Retirement Study (HRS) Siegel et al. (2003) do not find a significant effect of husbands' job loss on wives' mental health in general. However, this study also considers individuals who lost their job due to lay-offs, which might result from mental health issues. Furthermore, due to the sampling design of the HRS, this study only analyzes individuals over the age of 50. In contrast, the present study looks at the entire range of working-age individuals and includes in the treatment group only individuals who lost their job due to plant closure.

Previous studies document spillovers of other events in one spouse's life on the other spouse's mental health. For instance, Bolger et al. (1989) find that stress experienced by one spouse is associated with strain in the other spouse.⁴ With a sample of the elderly Dutch population, Lindeboom et al. (2002) provide evidence that a severe illness of the partner significantly decreases own mental health. They also find that the death of the spouse strongly increases the risk of developing a depression. Compared to the other life events they analyze (e.g. disability, severe financial problems, death of child, death of grandchild), conjugal bereavement has the largest effect on mental health.

3. Estimation strategy

In order to estimate the effect of unemployment on the mental health of couples, this paper combines matching and difference-in-difference (DiD), which is regarded to be superior to pure cross-sectional matching estimators (Heckman et al., 1997). This estimator brings together the literature on selection on observables with the literature on selection on unobservables. The idea of the estimator is rather simple. In the matching part of the estimator, I take couples who are affected by unemployment and similar couples who do not experience unemployment. In the DiD part, I compare changes in mental health of these two groups. The DiD part eliminates time-invariant mental health differences between couples in the treatment and control group that result from unobserved variables (like personality traits and differences in the reporting behavior). In all analyses I focus on the average treatment effect on the treated (ATT), i.e. the unemployment induced change in mental health of those couples who are actually affected by unemployment as a result of plant closures.

The challenge is how to make treated couples (couples, where one spouse is affected by unemployment resulting from plant closure) and control couples (couples without job loss experiences in the period) similar. To increase similarity between the two groups, propensity score methods are often applied (Caliendo and Kopeinig, 2008),⁵ where the control group observations are reweighted either by weights that depend directly on propensity

³ Dew et al. (1992) provide an overview over earlier qualitative studies on this topic.

⁴ Jones (1993) and ten Brummelhuis et al. (2010) come to similar conclusions. Though, it remains unclear whether the associations presented in these studies can be interpreted as causal effects.

⁵ The propensity score (Rosenbaum and Rubin, 1983) is the probability to receive the treatment conditional on the covariates.

¹ The terms “partner” and “spouse” are used interchangeably in this paper.

² A further reason why the public health costs of unemployment might be underestimated is that often the focus is on short-term effects, and long-term consequences like potential scarring effects of unemployment (Clark et al., 2001) are not taken into account.

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