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Cylus et al. respond to "unrealized benefits?"

**Article (Accepted version)
(Refereed)**

Original citation:

Cylus, Jonathan, Glymour, Maria M. and Avendano, Mauricio (2014) *Cylus et al. respond to "unrealized benefits?"*. *American Journal of Epidemiology*, 180 (1). pp. 56-57. ISSN 0002-9262

DOI: [10.1093/aje/kwu105](https://doi.org/10.1093/aje/kwu105)

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Available in LSE Research Online: October 2014

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Response to Bruckner: a note on quasi-experimental study design

We thank Tim Bruckner for his thoughtful critique of our article, which highlights the many challenges in determining how social policies affect health.

Bruckner raises several interesting methodological issues. A valid point is that we cannot establish whether unemployment benefit program effects occur among the unemployed population in receipt of benefits, or whether benefit programs might prevent suicide among other populations, not in receipt of benefits. In response, Bruckner suggests that we investigate effects of unemployment benefit programs among the population that is actually eligible to receive these benefits. We caution against this approach for several reasons. First, changes in unemployment benefits will not only affect the income of workers themselves but also that of their family members, regardless of their labour market status. This may lead to spillover effects for those not directly eligible, and may explain why we found no significant differences in the relationship between unemployment benefit programs and suicides across age groups.

Second, the eligible population are not a static group, so that restricting the sample will introduce bias due to compositional changes in the eligible population over time. Importantly, these compositional changes may be the result of the policy itself: some studies suggest that an increase in unemployment benefits may raise the duration or incidence of unemployment(1, 2), for example, by lowering job search intensity among the unemployed (3). Thus, while benefits might mitigate income losses for unemployed workers, they may also increase joblessness in workers who would otherwise have stayed in their job or returned to work under a less generous benefit regime— thus altering the composition of the unemployed eligible population. This raises an important issue often overlooked: while social policies may improve the health of some segments of the population, they may also harm the health of other population groups. A ‘population-level’ estimate captures the *net* effect of these or other potentially offsetting mechanisms on state suicide rates, an estimate that is at least as important to policy makers as the effect of benefits on the eligible population.

We welcome Bruckner’s proposal for a longitudinal analysis of suicide among persons eligible for generous unemployment benefits. However, given that both suicide and unemployment are rare events, we estimate that to have sufficient power to identify an effect, a yearly sample of nearly 2 million individuals would be required. While large registry-linked datasets are available in some countries(4), we are not aware of any longitudinal dataset of this size in the US linking suicide and employment characteristics. Our approach partly overcomes this ‘small sample problem by exploiting routine suicide statistics and linking them to unemployment benefit laws.

As Bruckner points out, our graphical results would seem to suggest that benefits have a perverse effect on suicide when unemployment rates are low. While interesting and plausible, we note that estimates of the association between benefits and suicide when unemployment is low were imprecise and had wide confidence intervals that always crossed the null. Bruckner also raises the valid concern that changes in maximum unemployment benefits may be too small to yield meaningful effects on mental health. Annual changes in state maximum real total benefits averaged 0.3%, but ranged from -33.4% to 51.4%. Large swings most often occurred when policymakers altered the maximum number of weeks workers could receive benefits. The magnitude of changes in benefits is thus potentially large at least in some cases, enabling us to identify an effect.

We believe our paper provides novel evidence that unemployment benefits may help prevent suicide during recessions, albeit effects are of a small magnitude. A rigorous quasi-experimental design comes often at the price of less detailed measurement of mechanisms and sub-group analyses. We chose what we thought was the most rigorous design, but we welcome future investigations to identify potential mechanisms and populations for whom benefits might offer an escape from the negative mental health outcomes associated with economic downturns.

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