Invited Commentary

Invited Commentary: Are There Unrealized Benefits of Unemployment Insurance Among the Employed?

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Political statements about the relationship between the economy and health intensify during economic downturns and fade in times of prosperity. Population health researchers share this cyclical interest in that they publish relatively more peer-reviewed articles on this topic during recessions and immediately after recessions. In this issue of the Journal, Cylus et al. (Am J Epidemiol. 2014;180(1):45–52) follow in the “economy and health” research tradition and examine the relationship between US unemployment rates and suicide mortality. Their work makes a novel contribution in that they examine whether generous unemployment insurance benefits attenuate the relationship between economic downturns and suicide mortality in the United States. In this commentary, I assess the internal validity of their analysis, call into question some assumptions of their approach, and place their contribution within the context of the broader literature. I then argue that population-based and individual-based approaches in the “economy and health” field often work in concert to create knowledge and inform policy-makers.

Political statements about the relationship between economic downturns and health tend to intensify during recessions and fade in times of prosperity. Researchers share this cyclical interest in that they publish relatively more peer-reviewed articles on this topic during recessions (1). The recent Great Recession (2007–2009), the longest recession since World War II, will likely yield important epidemiologic insights about biological and behavioral adaptations that induce morbidity. In the long term, politicians may use a subset of this research to assist with decisions regarding economic policy. This presumption, however, rests on the condition that the body of research holds strong internal validity and is replicated in other places and times.

In this issue of the Journal, Cylus et al. (2) follow in the “economy and health” tradition by examining the relationship between unemployment rates and suicide mortality. Whereas research on this topic holds over a 100-year history, Cylus et al. offer a novel contribution: They examine whether the generosity of a state’s unemployment insurance (UI) benefits attenuates the relationship between economic downturns and suicide mortality in the United States. This research seems perfectly timed with policy discussions under way in Washington, DC. In January 2014, President Barack Obama argued for a 3-month extension of emergency UI benefits for the 1.3 million persons who are long-term unemployed (3). In early February, the Senate rejected President Obama’s proposal, although at this writing another Senate vote seems imminent (4). It is indeed rare when epidemiologic analyses focus on a tangible policy element that remains at the forefront of current political debates.

I have much to commend about Cylus et al.'s paper (2). The authors, importantly, attempted to replicate prior work carried out in Europe which showed no effect modification of the economy-suicide relationship by a country’s UI expenditure level (5). In addition, the authors selected a plausible mechanism—maximum income replacement from UI—that could buffer the well-documented psychological sequelae among persons recently displaced from their jobs. Their fixed-effects methods and identification strategy, moreover, appropriately controlled for most known confounders that...
could plausibly bias results. I also thank Cylus et al. for not overstating the implications of their findings.

The authors’ effort, however, falls short in two key ways. First, the logic of their population approach hinges on the plausibility of what I call an “unrealized benefit.” Second, the pattern of their results remains difficult to interpret and appears inconsistent with their conclusions. I offer my key criticisms below in the hope that they will assist epidemiologists in gauging the internal validity of Cylus et al.’s results. I also briefly review the literature on the relationship between the economy and health for readers unfamiliar with this field, since this foundation is necessary for understanding my critique of the authors’ work.

THE ECONOMY AND HEALTH

Literature on the economy and health can be classified into either “risk factor” or “net effects” lines of inquiry (6). Risk-factor studies examine the extent to which contracting (or expanding) economies affect the health of individuals. These studies typically follow individuals recently exposed to an undesirable economic contraction. Persons most often studied in the risk-factor framework include those who have recently lost a job, suffered a pay cut, been forced to work fewer hours, or lost financial assets. By contrast, net-effects studies treat the population as the unit of analysis and examine population-level health outcomes following economic decline. These net-effects studies aggregate data on both the exposure variables (e.g., state-level unemployment rate) and the outcome variables (e.g., annual incidence of suicide). Inference in the net-effects studies remains at the population level, and these studies inform the surveillance efforts of policy-makers attempting to distribute scarce public health resources. Allocation of public health resources, as well as policy decisions, often turns on net-effects considerations. In terms of internal validity and epidemiologic rigor, I make no value judgment regarding the relative benefits of risk-factor or net-effects research. In the field of economy and health, each of these lines of inquiry builds on strong theory, elucidates distinct causes of morbidity, and informs our understanding of behavioral and biological responses to changes in the economy.

Regarding economic downturns and suicide, risk-factor research converges on the finding that job loss precedes an increase in individual psychological morbidity and risk of suicide (7). This finding has been replicated across many places and times. However, investigators who have conducted mechanistic research on individuals do not agree on what component of job loss increases morbidity (6). Candidate mechanisms include the loss of structure, work identity, and routine; attendant stressful life events that often follow unemployment (e.g., divorce, family trouble); and inability to purchase health-promoting goods (e.g., mental health care) via loss of income.

Net-effects research also generally supports the conclusion that population suicide rates increase during economic downturns (6). This work builds on empirical research as well as theory that recessions affect not only persons who lose jobs but others as well. Unexpectedly high levels of unemployment may lead to increased job insecurity and changes in the nature of the work environment (8). Longitudinal studies, for instance, find that regional unemployment results in anxiety, depression, and poor reported health status among those who remain employed (9). These psychological reactions may be quite pervasive during recessions, given that employed persons who fear job loss far outnumber those who actually lose their jobs (10).

UNREALIZED BENEFITS

Within this context, Cylus et al.’s research falls into the net-effects category in that they examine state-year variation in suicide rates in the United States. The important twist is that the authors use states’ generosity of UI benefits as a potential moderator of the relationship between unemployment rates and suicide. If I understand their logic, the hypothesis was that the income gain from relatively generous UI benefits may reduce psychological morbidity among persons who have recently lost their jobs. The generous UI benefits would, therefore, also reduce the risk of suicide among job losers. In addition, the authors argue that persons who remain employed may also find comfort in the availability of generous UI benefits, even if they never need to use them. In this sense, the generosity of a state’s UI benefits would act like an insurance policy against mental distress should a person lose his/her job.

The population-based focus of the inquiry implies that results, if they reject the null, cannot distinguish between the two explanations above. The authors, to their credit, are also careful with regard to this point. However, my main concern is as follows: Why would populations who never lose their job show better mental health (and reduced suicide) if their state provides a modicum of additional UI benefits that they never realize? To gain this additional UI benefit, the individual would, of course, first have to lose his/her job, which research documents as quite debilitating in its own right, even absent any income loss. I do not view this “unrealized benefit” explanation as plausible. Moreover, I know of no research which finds that employed persons show less anxiety or distress when their state’s generosity of UI benefits rises (holding the unemployment rate constant).

If, alternatively, Cylus et al. view their population-level finding as being driven entirely by persons who lose jobs and receive the UI benefits, why not conduct a risk-factor-based study on these individuals? The authors state that existing research documents improvements in self-rated health among persons who accept UI benefits. This work suggests that income compensation per se may reduce the risk of psychological morbidity. For this reason, a longitudinal analysis of morbidity among persons eligible for generous UI benefits could potentially make a strong contribution to understanding the relationship between UI and mental health. Whereas the authors recognize the caveat that persons who self-select into UI receipt may inherently have better health than those who qualify for UI benefits but do not accept them, this bias is not fatal, for two reasons. First, an intent-to-treat analysis on persons who are eligible for generous UI benefits could overcome the issue of self-selection into receipt of the maximum UI benefit. The fact that persons who are eligible for UI differ from persons who are ineligible would in no way preclude strong internal validity of this approach. Moreover, if the research question centers on health outcomes following receipt of UI benefits,
I would argue that concerns about selection bias from exclusion of unemployed persons who do not have the potential to be exposed (i.e., they will never qualify for UI benefits) are misplaced. Second, the analyst could capitalize on seemingly exogenous variation, across states and/or years, in UI generosity. These proposed analyses would require collection of additional data which are harder to obtain than the data used in the current analysis but are still available to researchers (11, 12).

INTERPRETATION OF RESULTS

I appreciate the authors’ exploratory analyses, which, in addition to the main result, provide a nuanced picture of effect modification of the recession-suicide relationship by generosity of UI benefits. That said, the pattern of results defies straightforward interpretation. I expected a priori that persons with the strongest attachment to the labor market—typically those aged 35–55 years, who disproportionately use UI benefits—would reflect the age group in which the UI benefits prove most salutary. By contrast, this age group appears to have been least affected (see Cylus et al.’s Figure 3A (2)).

In addition, the fitted model of Cylus et al.’s Figure 2 shows that, below an unemployment rate of 4.9%, suicide mortality is predicted to be lower in states with less generous UI benefits (2). If I interpret this figure correctly, generous UI benefits have a perverse effect on suicide in most years (i.e., in 38 of the 50 states in an average year, based on the mean unemployment rates shown in Cylus et al.’s Table 1 (2)). I do not know whether the confidence intervals for the lines in Figure 2 remain so wide as to render them statistically indistinguishable, but if this is not the case, I welcome the authors’ post hoc interpretation of this puzzling result.

Finally, to further assist this reader with interpreting the strength of the effect modification by UI, I would have benefited from an estimate of the actual year-to-year changes in the generosity of UI benefits. The authors’ fixed-effects strategy appropriately controls for state- and year-“level” differences in UI, which leaves only state-specific, year-to-year changes in UI benefits as the operational independent variable. If this annual average change in the maximum UI benefit is quite small (e.g., $50–$100), it would pose a challenge to imagine how this small “dose” of increased UI would reduce the population-level risk of suicide.

CONCLUSIONS

Cylus et al. (2) take a sophisticated approach in examining the extent to which generous UI benefits buffer the adverse mental health consequences of economic downturns. I view their article as continuing an important line of inquiry that carefully scrutinizes the role of exogenous changes in UI benefits in perceived security and anxiety among both employed and recently unemployed persons. The fact that their findings diverge from the UI results found in Europe (5), moreover, should promote further replication attempts as well as a careful assessment about the unique nature of the US case.

My critique of the authors’ article should not be taken as an indictment of a population-based approach in general or the “economy and health” field in particular. In the interest of full disclosure, I have contributed to such net-effects research and intend to pursue it in the future. Rather, I contend that population health researchers must continue to closely align the question of interest with existing theory, the best data available, and the unit of analysis that appropriately addresses the line of inquiry. Only then will epidemiologists, and perhaps policy-makers, realize the full benefit of this research.

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REFERENCES
