

Effects of the Great Recession: Health and Well-Being

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Abstract

The existing evidence linking recessions to individual and population health presents a puzzle. Some studies show that people who experience the kinds of labor market, housing, and asset shocks that proliferate in recessions suffer negative health consequences, whereas other studies show that mortality rates fall when the economy worsens. This review synthesizes evidence from these distinct research traditions in light of emerging findings from the Great Recession of 2007–2009. It traces pathways by which macroeconomic changes “get under the skin” and generate contradictory aggregate- and individual-level consequences. Research on the longer-term health effects of recessions could be strengthened by integrating theoretical and analytical approaches from sociology. These include a multilevel perspective that considers how individuals cope with recessions as members of families and communities embedded in different policy environments, and attention to cascades of recessionary shocks, individuals’ strategies for coping with them, and the way these intersect with health trajectories.

INTRODUCTION

The global economic downturn of 2007–2009, dubbed the Great Recession by the American media, was the worst US recession since the Great Depression of the late 1920s and the longest in the postwar era. Job losses were steeper than in recent downturns, the long-term unemployed made up a greater fraction of those out of work, and macroeconomic recovery has been very slow (Danziger 2013, Grusky et al. 2011). A large body of research has linked job losses, unemployment, and the financial strain that often follows to worse health (Dooley et al. 1996), leading some experts to expect a health crisis in the wake of this recession. Emerging research has confirmed worsening mental health over this period (Modrek et al. 2013) and a significant increase in suicides in many areas (Stuckler et al. 2015). However, a separate line of research has shown that overall mortality rates generally fall when unemployment rates climb (Ruhm 2000), and although this pattern appears to have weakened recently, deaths from most causes did not rise, despite the severity of the Great Recession.

In this review, we discuss and explain this central puzzle of the evidence, showing how conclusions about the way recessions affect well-being depend on the level of aggregation at which the association is measured and the specific health outcomes considered. Other recent reviews have summarized evidence for the countervailing findings: improvement in some key indicators of population health at the aggregate level, but declining well-being among those who experience the kinds of labor market, housing, or asset shocks that are more common in recessions (Burgard et al. 2013, Catalano et al. 2011, Modrek et al. 2013). We consider these past findings in light of newly emerging evidence from the Great Recession, including some evidence that may signal divergence from patterns of recent decades. We also trace the proposed pathways by which macroeconomic changes “get under the skin” to affect individual health and generate the sometimes contradictory micro- and macro-level findings. This means that we make two kinds of implicit comparisons. Aggregate-level indicators of health in the Great Recession (or earlier recessions) are generally considered for how they depart from levels or trends in the prerecession period, with the expectation that the secular trend would have continued in the absence of recession. We compare at the micro level the health outcomes of individuals who experience a specific kind of shock commonly experienced in recessions, such as job loss, with the health outcomes of their contemporaneous counterparts who remained employed.

In reviewing the evidence we are mindful of concerns about the causality of associations. Some individual-level studies have been critiqued because of the possibility of health selection, or when those in poor health are most likely to experience employment problems or other shocks, such that any health effect of these events may be overestimated (see discussion of this issue with regard to job loss in Brand 2015). Cross-sectional evidence is most vulnerable, so whenever possible we feature individual-level studies that use longitudinal data and consider the potential impact of health selection. Some individual- and aggregate-level studies have also been critiqued because they imply that health changes occur concurrently with business cycle changes or emerge after a lag of one or a few years. Acute effects of recessionary changes are reasonable in some cases, and associated mechanisms may be clear. For example, decreased air pollution due to less commuting as business activity slows could be immediately associated with a lower rate of acute health events among those susceptible because of respiratory conditions. However, the development of other health consequences may take considerably longer and may operate through a complex chain of mechanisms. Where possible, we focus on evidence that considers a plausible period over which health effects might emerge for a given outcome, and discuss the limitations of extant research with regard to identifying chains of mechanisms and long-term consequences.

In discussing future research directions, we focus particularly on ways that sociologists could enhance understanding of the ways recessions are linked to health and well-being. Although sociologists have made key contributions to this research literature, from Durkheim's [1951(1897)] study of economic change and suicide to Elder's (1998) study of the children of the Great Depression, most contemporary research comes from economics and the health sciences. Sociological research traditions in social stratification, community effects, the family, social demography, and the life course could help explain and bridge the aggregate- and individual-level evidence and provide a clearer view of the potential long-term consequences of recessions for health and health disparities. We do not attempt encyclopedic coverage of this large and multidisciplinary literature; we instead use selected examples to characterize the empirical evidence, highlighting evidence from the Great Recession period when it is available. Our review focuses largely on the United States and Europe and on mortality, physical and mental morbidity, and perceived health and distress, contexts and well-being measures with the most substantial evidence base.

RECESSIONS AND HEALTH: AGGREGATE-LEVEL PATTERNS

Overall and Cause-Specific Mortality

Some researchers have assessed the link between recessions and health by examining how trends in business cycle indicators track evolving rates of mortality or morbidity. Research from as early as the 1920s showed the somewhat counterintuitive silver lining of reduced overall mortality rates in recessions (Ogburn & Thomas 1922). Although some findings from the 1970s received considerable attention for suggesting instead that death rates increased when the economy worsened (e.g., Brenner 1979), this work was later challenged on the basis of methodological issues (Ruhm 2013). Since then, a procyclical pattern—in which the mortality rate rises in expansions and falls in recessions—has been found in the United States (Ruhm 2013), Germany (Neumayer 2004), Norway (Haaland & Telle 2015), Spain (Tapia Granados 2005b), 23 OECD (Organisation for Economic Co-operation and Development) countries (Gerdtham & Ruhm 2006), Mexico (Gonzalez & Quast 2011), Japan (Tapia Granados 2008), and 8 Asia-Pacific countries (Lin 2009). Most evidence has come from milder oscillations of the business cycle, but a procyclical pattern was also found for the Great Depression in the United States (Tapia Granados & Diez Roux 2009).

Specific causes of death that have most consistently shown a procyclical pattern in recent decades are traffic-related fatalities and cardiovascular deaths (Ruhm 2013). By contrast, with few exceptions, suicide mortality rises in recessions and falls when the economy improves, making it countercyclical (Catalano et al. 2011, Modrek et al. 2013). Traffic-related fatalities declined (Stuckler et al. 2015) and suicide rates rose in the Great Recession in the United States and many other (Chang et al. 2013, Phillips & Nugent 2014), though not all (Reeves et al. 2014), middle- and high-income societies. However, the most recent US data suggest that the procyclical pattern of overall mortality is weakening (McInerney & Mellor 2012, Ruhm 2013, Stevens et al. 2011). One proposed explanation for this weakening points to the increasing role of cancer in driving overall mortality rates and their fluctuation. In the past, cancer deaths were only weakly related to the business cycle, but they may increasingly be showing a countercyclical pattern as the affordability of effective cancer treatments that have only recently become available declines in tough economic times (Ruhm 2013). Further examination of emerging overall and cause-specific mortality patterns, and of the mechanisms that underlie them, is needed to understand this departure from a relatively robust procyclical pattern of the past century.

A longer historical view verifies that the association between recessions and well-being depends on the social, economic, epidemiologic, and technological contexts. Economic decline

was associated with an increased, not decreased, mortality rate in Sweden in the nineteenth century, when infectious diseases accounted for a large fraction of total deaths and spread more easily during difficult economic times. However, the association became procyclical in the latter part of the twentieth century, after industrialization and medical technological advancements led to changes in the main causes of death (Tapia Granados & Ionides 2008). Whereas deaths from pneumonia and influenza appeared strongly procyclical in the United States during the early-twentieth century, the association weakened more recently while the procyclicality of traffic-related fatalities strengthened in the latter part of the century (Tapia Granados 2005a). Historical shifts such as these reflect changes in salient health risk factors, evolving technology and interventions including medical care and public health responses, the demographic composition of the population, and the evolving roster of contributing causes to total mortality.

Physical and Mental Morbidity

Associations between the business cycle and levels of physical and mental health show mixed patterns. Some evidence suggests a procyclical pattern of physical health. A study of US adults during the period 1972–1981 showed that lower unemployment rates were associated with an increased prevalence of reported medical problems, acute morbidities, restricted-activity days and days in bed, ischemic heart disease, and back problems (Ruhm 2003). Mexican data from 1995 to 2010 showed that ischemic heart disease and hypertension incidence were positively related to GDP per capita, though significant associations were found only when considering a sustained increase in GDP over five years (Quast & Gonzalez 2014). Hypothesized (but usually untested) mechanisms proposed include the faster pace of life, increased work stress, greater disposable income, and less healthy behaviors that come with economic expansions (Ruhm 2005).

However, other studies have found a countercyclical pattern of physical well-being. Net of individuals' own characteristics and unemployment status, levels of poor self-rated health in Greece were higher in the Great Recession (Simou & Koutsogeorgou 2014, Vandonos et al. 2013), and the prevalence of poor health status and cardiovascular and respiratory problems in the United Kingdom rose in the period 2009–2010 (Astell-Burt & Feng 2013). The incidence and consequences of HIV, tuberculosis, and other infectious diseases rose following the 1990s financial crisis in countries of the former Soviet Union and Eastern Europe (Suhrcrke et al. 2011), and outbreaks of HIV, pneumonia, and influenza increased in the wake of the Great Recession in Greece (Simou & Koutsogeorgou 2014). Moreover, there is considerable evidence for worsening mental health during recessions. Economic downturn has been linked to increased levels of inpatient mental health admissions (e.g., Catalano & Hartig 2004), and symptoms of mental distress generally rise when macroeconomic conditions worsen (Modrek et al. 2013). These associations have been attributed to rising stress, financial hardship, and declining institutional resources in recessions, but researchers typically do not test the proposed pathways empirically.

UNPACKING THE AGGREGATE ASSOCIATIONS: WHY ARE RECESSIONS LINKED TO HEALTH?

Recessions affect social and physical environments and change individuals' resources and behaviors in ways that influence health and underlie the aggregate patterns discussed above. We organize our discussion of previous research around two heuristic diagrams. **Figure 1** summarizes aggregate-level changes that characterize recessions and three key pathways proposed to affect individuals' behaviors and health: changes in time use, stress, consumption, or a combination thereof. **Figure 1** also displays some key indirect effects of recessions that are not driven by these three

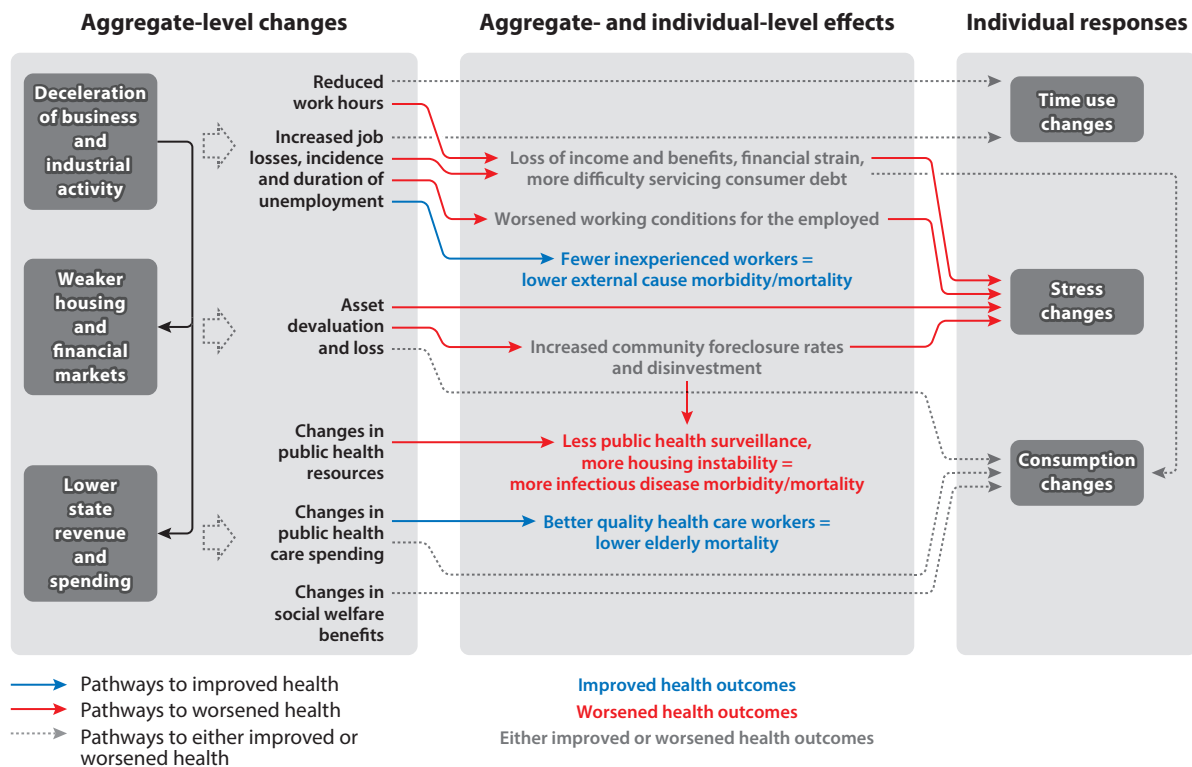


Figure 1

Aggregate-level changes that characterize recessions, their aggregate- and individual-level effects and individual responses. Solid blue arrows or blue text denotes pathways or outcomes linked to improved health, respectively; solid red arrows or red text indicates pathways or outcomes linked to worsened health, respectively; and dotted gray arrows or gray text indicates pathways or outcomes that could either improve or harm health, respectively.

types of individual responses. **Figure 2** elaborates links between changes in time use, stress, and consumption and specific health outcomes. Time use changes include shifts in the amount of time spent at work and at leisure, for example; consumption changes might include either reductions or increases in use of health-harming substances such as tobacco, depending on the mechanisms proposed.

These two figures are decoupled because examination of longer chains of causal mechanisms linking aggregate-level changes such as weaker housing markets all the way down to individuals' health outcomes presents enormous data and analytical challenges. The very limited understanding of how the accumulation of individual-level shocks, individuals' responses, and health changes generates subsequent levels of health and social and economic conditions makes such feedbacks from the individual level to the aggregate level an important area for future study.

Aggregate-Level Changes and Indirect Effects

Recessions are characterized by a deceleration of business and industrial activity that may lead to weakened housing and financial markets and lower state revenues. As illustrated in **Figure 1**, these changes may lead to reduced work hours, increased job loss and unemployment, asset devaluation

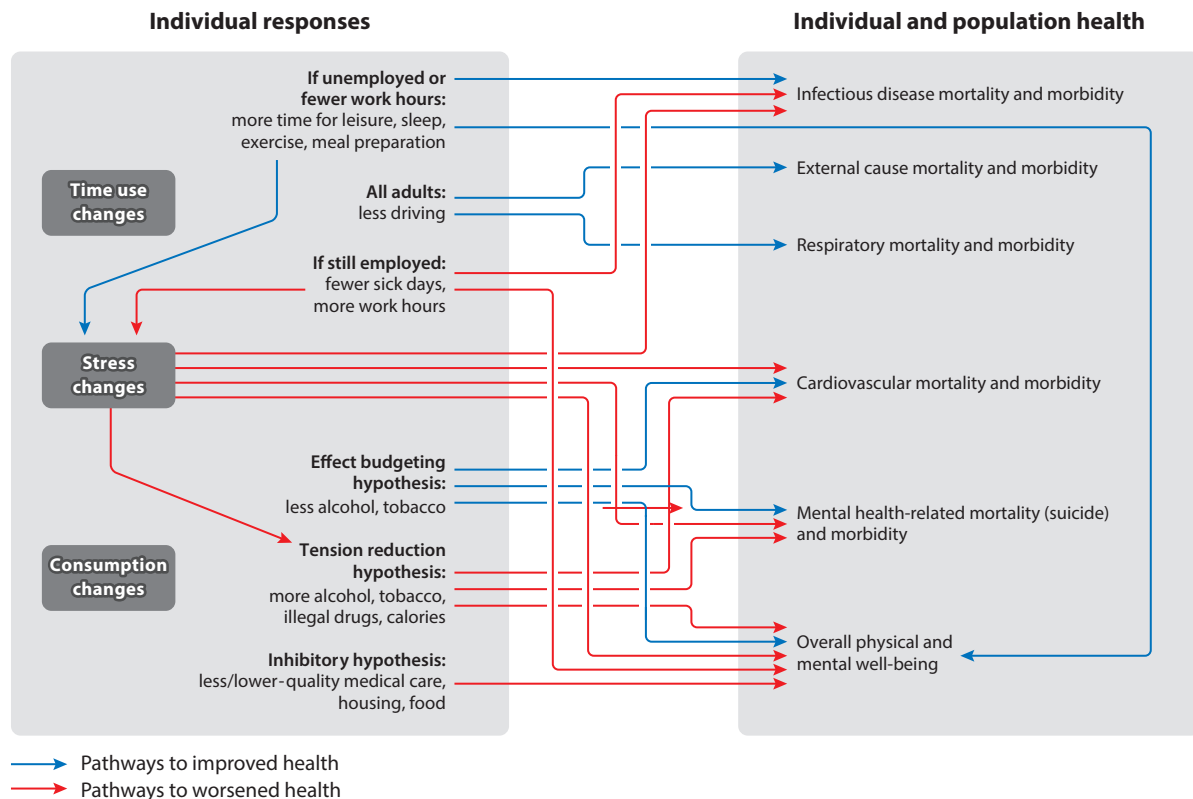


Figure 2

Links between individual responses, in the form of time use changes, stress changes, and consumption changes, and individual and population health outcomes. Solid blue arrows denote pathways linked to improved health and solid red arrows indicate pathways to worsened health.

and loss, and decreased funding for public health resources, public health care spending, and social welfare benefits (Modrek et al. 2013).

Heightened employment instability and lengthened unemployment spells are hallmarks of recessions, and considerable evidence from individual-level studies suggests that individuals who experience job displacements will have worse health than their counterparts who avoid job loss. For example, substantial evidence shows that the unemployed have poorer mental health than their employed counterparts (Paul & Moser 2009). Because the causality of the association is disputed, given the possibility that unhealthier people are more likely to become or stay unemployed (Schmitz 2011), some researchers have shown that job losses induced by plant closures or other reasons not likely associated with the job loser's characteristics are associated with worse physical and mental health and increased mortality (for a review of this evidence, see Brand 2015). Researchers have explained these findings by arguing that loss of a job or reduced work hours can lead to financial strain, an important risk factor that cascades into poorer mental and physical well-being (Price et al. 2002). For example, financial strain could lead to difficulty servicing debt, which has been linked to stress and poorer health (Keese & Schmitz 2014, Turunen & Hiilamo 2014), and might influence consumption changes. Even those who remain employed in recessions may face poorer work conditions, such as increased perceived job insecurity and work-related

stress, compared with those employed during better economic times (Modrek & Cullen 2013, Tausig & Fenwick 1999). Various studies have linked poor working conditions to worse health outcomes (Burgard & Lin 2013).

However, labor market shocks may improve health if they change time use or consumption in health-enhancing ways, such as by reducing work stress or lowering consumption of tobacco. These and other pathways are elaborated in **Figure 2** and are discussed further below. Additionally, higher unemployment rates have been linked to a drop in workplace accidents, compared with the prerecessionary period, presumably because the most experienced or qualified workers are most likely to keep their jobs and the slower pace of production may allow for more attention to worker safety (de la Fuente et al. 2014).

The Great Recession may have negatively influenced health, even for those spared from a volatile labor market, because of asset losses that occurred when financial and housing markets collapsed. One study of older Americans showed that those with the highest stock holdings prior to the Great Recession (and largest absolute losses) were 50% more likely to feel depressed and 20% less likely to report excellent or very good health, compared with those with lesser losses (McInerney et al. 2013). Although underlying mechanisms have not been tested, wealth losses may increase stress or change consumption behaviors. Moreover, net of an individual's own housing asset loss, a high incidence of local foreclosures has been linked to a greater risk of weight gain (Arcaya et al. 2013), depression (Cagney et al. 2014), and suicide (Houle & Light 2014). Scholars have speculated that, in addition to increasing stress levels in the neighborhood, rising housing instability could intensify residential crowding, homelessness, and the presence of abandoned buildings that provide shelter for insects and other disease vectors. Such factors could weaken community-level immunity and health-relevant infrastructure and increase the risk and severity of infectious disease outbreaks (Suhrcke et al. 2011). For example, one study found that a wave of notices of delinquency on adjustable-rate mortgages in Kern County, California, led to neglected swimming pools and a 276% increase in the number of human West Nile virus cases in 2007 due to increased mosquito reproduction (Reisen et al. 2008).

Recessions also influence state and local revenues, raising pressure to curb budget deficits and reduce borrowing. Austerity measures implemented in response to the Great Recession disrupted prevention and treatment services provided by the public health and medical care systems and reduced funding to social protection programs, even as demands on these systems rose (Reeves et al. 2013). Some consequences for health may already be visible; declining public health preventative efforts in Greece coincided with the spread of malaria and West Nile virus and a spike in new HIV cases among intravenous drug users (Bonovas & Nikolopoulos 2012). Health care personnel were reduced between 2009 and 2010, though admissions to Greek public hospitals increased by 24%, accompanied by a 22% rise in the number of patients visiting local health centers and a 17% rise in the number of laboratory tests (Kentikelenis et al. 2011). Although this increase can be explained partly by patients' change in preference from more costly private care to publicly funded hospitals (Kentikelenis & Papanicolas 2012), the increase might also signal greater need for health care. Changes in the availability or affordability of health care could reduce individuals' consumption of health care or other health-relevant goods, though more research is needed to verify these explanations for change in health. Other changes in health care quality in recessions could improve aggregate health indicators. Researchers have proposed that nursing home care quality improves in recessions, when more qualified personnel are likely to remain employed or be seeking work, potentially explaining why deaths among the institutionalized elderly decline (Stevens et al. 2011). Finally, declining availability of social welfare program support when governmental revenues fall could mean that recipients change their consumption in ways that might harm or enhance health, depending on what goods and services are foregone.

Individual-Level Responses and Health Outcomes

Figure 2 shows pathways linking individual responses to the kinds of events or changes that commonly happen during recessions to specific health outcomes.

Changes in time use. Researchers have proposed that recessions could positively affect health; for example, people who lose jobs or have their work hours reduced, compared with their unaffected counterparts, gain time for exercising, cooking healthful meals, sleeping, or other behaviors linked to physical and mental well-being. Changes in time use such as these are thought to reduce stress and thus improve health. Roughly half of the nonmarket hours that became available to laid-off workers in the Great Recession were devoted to leisure, such as watching TV, and another 30% were committed to home production activities, such as cooking or doing laundry (Aguiar et al. 2013). Researchers also documented significant increases in time spent caring for children and on education, shopping (Aguiar et al. 2013), and sleep (Ásgeirsdóttir et al. 2014, Brochu et al. 2012). Time use changes may also influence well-being in less obvious ways. For example, spending less time at work and in public spaces could lower the risk of contracting a communicable disease (Barmby & Larguem 2009, Cooley et al. 2011), and less driving reduces everyone's risk for traffic accidents, lowering external causes of morbidity and mortality. Less driving during economic downturns also reduces air pollution, and this may help explain why recessions are marked by reduced cardiovascular and respiratory problems (Heutel & Ruhm 2013) and infant mortality (Chay & Greenstone 2003). However, for those who remain employed in a recession, time use changes could have more negative implications. Researchers have conducted simulations to show that without paid sick days, the employed may stay at work even when ill, increasing the risk of spreading infections (Kumar et al. 2013). Additionally, working conditions worsen in firms that have laid off many workers (Tausig & Fenwick 1999), an experience more common in recessions, and such changes could increase stress levels and mental and physical morbidity.

Stress. Researchers commonly argue that recessions increase stress, whether because of personal experiences of recession-related shocks or because of more ambient environmental influences, such as community conditions that change in response to rising local foreclosure rates, and that this accounts for health changes. Although rarely empirically tested as explanatory mechanisms, acute and chronic stress can cause negative affective states (e.g., feelings of depression and anxiety) and changes in health-relevant coping behaviors (e.g., increased tobacco use). Acute and chronic stress are also implicated in increases in inflammation, and reactions by endocrine response systems that can affect regulation of physiological systems and risk for physical and psychiatric disorders including cardiovascular disease and depression (Cohen et al. 2007). Stress exposure may also reduce immunity levels of individuals and populations, increasing risk for an array of health problems (Suhrccke et al. 2011).

Changes in consumption. Economic insecurity may motivate people to cut back on purchases they consider less essential, a proposed mechanism of recessionary behavioral change referred to as effect budgeting (Catalano et al. 2011). Some US research from earlier recessions has shown that alcohol consumption is procyclical, such that people consume less when resources are limited (Ruhm 1995, Ruhm & Black 2002), and that smokers reduce the number of cigarettes they smoke during recessions (Ruhm 2000, 2005). Consumption of soft drinks and sweets declined in Iceland between 2007 and 2009, while health-promoting behaviors such as using fish oil increased (Ásgeirsdóttir et al. 2014). However, other studies have found evidence for a countercyclical pattern of consumption. This countercyclical pattern supports the countervailing tension reduction

hypothesis that individuals may consume more alcohol, tobacco, or other substances as a coping strategy in response to economic insecurity (Angelini & Mierau 2014, Catalano et al. 2011). This could explain why in the early 2000s in the United States the recession was linked to increases in binge drinking, alcohol-involved driving, and alcohol abuse (Dávalos et al. 2012). Even though overall alcohol consumption decreased during recessions in the 1980s and 1990s in the United States, binge drinking increased (Dee 2001). Other evidence shows that rates of teenage drug use and distribution rise and that rates of teen and young adult smoking increase during economic downturns (Arkes 2007, 2012). The Great Recession was also associated with a small increase in purchased calories (Ng et al. 2014).

An economic downturn could reduce the consumption of basic goods and services relevant to a variety of health outcomes. Non-emergency medical care was foregone more frequently in the United States during the Great Recession, and social inequalities in the likelihood of foregoing care for cost reasons rose (Burgard & Hawkins 2014). Housing loss and other forms of housing instability due to cost have been linked to poorer physical and mental well-being (Burgard et al. 2012, Pevalin 2009), though more research on the Great Recession period is needed. Food insecurity rose precipitously in the United States during the recent downturn (March et al. 2009), potentially posing a threat to the well-being of all, especially children (Weinreb et al. 2002).

Departing from past evidence, however, the Great Recession appears to have had only a negligible impact on consumption behaviors related to smoking, alcohol use, and obesity in the United States (Tekin et al. 2013). Also, although people spent more time cooking during this recession (Aguiar et al. 2013), more cooking time did not necessarily lead to less eating out, and further research is needed to understand why this might have been the case (Smith et al. 2014). In addition, eventual health consequences of behavioral shifts from time use to consumption must be considered in light of countervailing changes. More free time could mean more opportunities for exercise (Xu 2013), but this might not compensate for the decline in overall daily physical activity due to job loss itself, particularly for blue-collar workers (Colman & Dave 2013).

FUTURE DIRECTIONS

A sociological lens could improve our understanding of the complex ways that recessions are linked to health and well-being, and of the context dependency of these associations. Sociologists could make substantial contributions to several emerging and interconnected research directions, including an assessment of the impact of the Great Recession on health inequalities and the development of a more integrative, temporally complex and multilevel view of the links between business cycles and health. The discipline's theoretical and analytical approaches allow researchers to focus on multiple social and economic domains in which recessions could affect well-being and sensitivity to the contributions of both structural forces and individuals' actions that shape trajectories of decline or recovery.

Recessions, Health Inequalities, and the Role of Policy

Many scholars have predicted that the Great Recession will magnify existing socioeconomic gradients in health (Karanikolos et al. 2013, McKee 2011), but evidence from past recessions suggests that inequality could rise, remain stable, or even fall (Bacigalupe & Escobar-Pujolar 2014) and that changes in inequality will depend on societal context and the health outcome under study. The Southeast Asian crisis of the late 1990s provides one example of the possibility for rising health disparities. In South Korea, the self-rated health of college graduates did not change during the downturn, but it did decline for those with middle or low levels of education (Khang et al. 2004);

the socioeconomic gap in alcohol-attributable mortality grew wider among men (Shim & Cho 2013); and in the 10 years following the crisis, income-related disparities in depression, suicidal ideation, and suicide attempts doubled (Hong et al. 2011). Health disparities also grew during the transformation of the Russian Federation in the late 1980s. Whereas the life expectancy of less-educated men and women actually declined in the wake of the massive social and economic changes, a nearly unprecedented reversal, it continued to rise for Russian university graduates (Murphy et al. 2006). However, in other recessionary contexts health disparities have remained stable or even decreased. After the Japanese asset collapse of the early 1990s, income-based disparities in self-rated health declined even as income inequality rose, because asset losses and their consequences were concentrated among the most advantaged (Kachi et al. 2013). Additionally, there was only limited change in self-rated health disparities by employment status or education following the economic downturn of the early 1990s in Norway, Sweden, and Denmark (Lahelma et al. 2002), and even though the mortality differences between manual and nonmanual workers in Finland continued to grow, the pace of increase slowed (Valkonen et al. 2000).

A complex set of factors determines how and to what extent health disparities evolve in response to an economic crisis, but governmental intervention is one important source of variation over time and place. Research on less troubled economic periods has shown that strong welfare states can lessen the negative health effects of unemployment and related hardships (Burda & Hamermesh 2010, Eikemo et al. 2008). Active labor market programs—spending on services or training aimed at improving beneficiaries’ prospects for finding employment or improving their earnings—are particularly effective in buffering against increases in suicides, the cause of death that consistently increases during recessions (Stuckler et al. 2009). Such interventions could reduce disparities if they lessen negative health consequences for those with the fewest resources, so there is considerable concern about the potential health and inequality consequences of the austerity measures applied in some of the most recession-struck European countries (i.e., Kentikelenis et al. 2011, Stuckler et al. 2010). Early evidence for impacts across different welfare states and policy regimes is mixed. Disparities in the prevalence of fair or poor self-rated health in Estonia, Lithuania, and Finland did not increase and were even slightly attenuated for Lithuanian and Estonian men (Reile et al. 2014). Disparities in perceived physical and mental health did not change in the United Kingdom (Bacigalupe & Escolar-Pujolar 2014), but although alcohol use overall declined during the recession, current drinkers who were unemployed had an elevated risk of binge drinking compared with their employed counterparts (Harhay et al. 2014). Moreover, educational disparities in perinatal outcomes and mental health increased in Spain (Bartoll et al. 2014, Juárez et al. 2014).

It remains unclear how health disparities in the United States will be affected by the Great Recession, but there are reasons for concern. Racial and socioeconomic disparities in health could rise, given past evidence for the greater vulnerability of African Americans and those least likely to be employed to health effects of recessions (Charles & DeCicca 2008). African Americans and minorities have faced sharper job and housing losses in recent years (Immergluck 2008), and the deepest blows of the foreclosure crisis were concentrated in the already-disadvantaged communities targeted by subprime mortgage lenders in the years preceding the recession (Rugh & Massey 2010). A historically slow and jobless recovery and, for many who had only recently become homeowners, the loss of their largest financial asset in the foreclosure crisis mean that low- and middle-income Americans face persistent challenges to recovery from the Great Recession. These challenges may have particularly harmed prospects for financial stability and upward mobility among working-class and marginally middle-class families, with consequences for adults and their children such as interrupted careers, loss of savings, stunted earnings trajectories, and limited funding for higher education. These persisting socioeconomic effects could harm health over the long run and widen social disparities. It is also possible that a pernicious decline in health

disparities could occur, as some consequences of the Great Recession, such as large asset losses in the stock and housing markets, were felt mainly by the most advantaged. However, although the wealthiest Americans suffered greater absolute losses, relative wealth losses were disproportionately concentrated among lower-income, less educated, and minority households (Pfeffer et al. 2013).

The fallout of the Great Recession was countered by a strong policy response from the US government, with spending on social safety net programs rising from \$1.6 trillion in 2007 to \$2.1 trillion in 2010 (Moffitt 2013). Although participation in employer-sponsored health insurance had already been falling, the Great Recession accelerated the decline (Gould 2012), and the percentage uninsured rose from 16.6% in 2007 to 18.5% in 2010 (Holahan & Chen 2011). However, increased funding for Medicaid and the Children's Health Insurance Program (CHIP) prevented a greater spike in the number of uninsured individuals (Modrek et al. 2013). The 2009 American Recovery and Reinvestment Act (ARRA) provided \$87 billion for a temporary expansion of Medicaid and \$25 billion to subsidize COBRA, enabling newly unemployed workers to keep their health insurance for the short term (Rowland 2009). Uptake of other social welfare programs also increased during the Great Recession as more people met eligibility thresholds or when the thresholds were temporarily lowered. ARRA increased benefits levels for the Supplemental Nutrition Assistance Program (SNAP, formerly known as food stamps) and states were encouraged to relax eligibility rules. Lower-income households also benefitted from an expansion of the increased Earned Income Tax Credit (EITC or EIC) for larger families. Unemployment insurance (UI) coverage increased as more eligible individuals lost jobs, and the benefit was temporarily extended from 13 to 99 weeks, depending on the state's unemployment rate. The longer-term effects of these expansions on levels and equity in health are yet to be measured, but it will be important to also account for the simultaneous downsizing of local health departments, which lost over 23,000 jobs between 2008 and 2010 and were forced to eliminate programs owing to funding cuts (Willard et al. 2012). Further cross-regional and cross-national comparative research over the coming years could help illuminate the moderating effects of governmental interventions such as these on the evolution of health disparities in the wake of the Great Recession.

A Multilevel View of Recessions and Well-Being

As evident in our review, the extant research literature is largely divided into macro-level studies of associations between business cycles and population rates of death, disease, and health behaviors, and micro-level studies of health and behavioral consequences for individuals who experience the kinds of shocks or changes that happen more frequently in recessions. These separate sets of evidence generally show improved well-being at the population level but health decline at the individual level for those who experience recessionary challenges. Such patterns can coexist because the number of individuals whose health is harmed by recessions is generally exceeded by the larger group that reaps benefits, even if those positive benefits for any given individual are weaker than the health costs of, say, a long-term spell of unemployment. However, although it presents considerable challenges, more research that considers the interconnection of these levels, and the ways they might interact, is needed. Additionally, there is little understanding of how the positive and negative effects of recessions on individuals accumulate to aggregate rates of health and survival, though researchers often allude to individual-level behavioral mechanisms to explain aggregate rates.

One encouraging corrective is the small but growing body of evidence that considers multiple levels of exposure in the same analysis, such as the state-level unemployment rate and an individual's own employment situation. Though more research is needed, particularly studies using recent data, some of these multilevel studies support the balance of evidence from single-level

studies. In a study of US data from 1979 to 1997, the aggregate unemployment rate was associated with a lower hazard of mortality, whereas net of that association, being unemployed was associated with an increased risk of death (Tapia Granados et al. 2014). Such multilevel models could allow researchers to examine cross-level interactions that test whether aggregate conditions moderate the impact of individual experiences. Using multilevel models, a study of Quebec residents showed that census tract-level unemployment rates were not associated with perceived health and did not modify the impact of an individuals' own unemployment (Béland et al. 2002). However, a study of US adults employed in the 1980s showed that the implications of unemployment for perceived mental and physical health were heightened in areas with higher unemployment rates (Turner 1995). The evidence generally suggests that whereas the economic costs of job loss for individuals may be greater in recessions, the psychological costs may be lower because individuals may blame themselves less when they know the unemployment rate is high (for a review, see Brand 2015). The field is in need of further research that considers the independent effects of aggregate environmental conditions and personal experiences during recessions. Researchers should also consider the modifying influence of macroeconomic conditions on the experience of other, less studied events that happen more frequently in recessions, including housing instability or asset loss. Cross-level interactions could also be used to explore the potential buffering effects of governmental interventions if researchers make use of national or regional variation in the availability and intensity of income supports, job retraining, health care interventions, or other differences.

Beyond employing multilevel data and models, sociologists are uniquely situated to enhance how we understand important levels of social aggregation and associated mechanisms that bridge the population and individual levels, such as families and neighborhoods. Considerable research has explored how families and local social networks help individuals in poverty make ends meet (e.g., Edin & Lein 1997), and shape individuals' health (e.g., Smith & Christakis 2008), but less attention has been paid to how families and communities explain or moderate the health consequences of recessions. Families pool resources; make joint labor market, migration, and investment decisions; and are sources of social and instrumental support, making them an essential unit for understanding how people survive tough economic times. Job loss or asset losses in the household can affect the health of other family members via the stress that financial hardship puts on relationships (Conger et al. 1990) or because the stress levels and consumption behaviors of all family members may change in ways that could harm or benefit health when household income drops. For example, US data from 1977 to 2008 showed that husbands' unemployment reduced wives' alcohol use, regardless of their own employment status (Arcaya et al. 2014). Members of a household or social network may also make time or financial transfers to assist those experiencing negative recessionary events. Changes in time use may generate disparate health consequences within the household; for example, US men who were unemployed in the downturn of the early 1990s spent more time providing child care, though their greater contribution was not counterbalanced by women's lesser involvement (Casper & O'Connell 1998). This meant that children in two-parent households received more attention during economic downturns, which could have positive implications for their health and development in the long run. However, helping a family member deal with a recessionary shock could harm an individual's own health if it increases stress or changes their time or budget for maintaining their own health. For example, a family member's mortgage delinquency in 2006 was a significant predictor of a new incidence of food insecurity and foregone prescription medications between 2006 and 2010, even controlling for respondents' own mortgage delinquency and unemployment, in a sample of older US adults (Burgard et al. 2013).

Neighborhoods and communities are also central to sociological thinking, and there is growing attention to their influences on health (Sampson et al. 2002). Sociologists have explored and debated the multilevel mechanisms by which longer-term structural declines in employment

opportunity at the community level may influence the outlook and life chances of residents (Wilson 1996). This body of work could be usefully connected to historical research on communities that were decimated by more acute events such as the Great Depression [Jahoda et al. 2010 (1933)] and to newer research on the importance of shorter-term community-level recessionary changes for residents' health, such as the prevalence of foreclosures (Houle 2014) or recent histories of unemployment rates (Wight et al. 2013). In the case of rising foreclosure rates, for example, researchers have examined consequences at the community level that could have possible implications for health, including changes in social capital (Estrada-Correa & Johnson 2012), residential stability (Li & Morrow-Jones 2010), feelings of insecurity and mistrust (Ross & Squires 2011), and property crime (Arnio et al. 2012). However, while their harmful aspects have been the focus in recent research on recessions and well-being, future studies should also consider the ways that communities might protect residents' health in recessions. Research from nonrecessionary periods has shown that greater social cohesion among neighbors is associated with fewer negative health behaviors (Echeverría et al. 2008) and better self-rated health (Bjornstrom et al. 2013), for example.

The mechanisms by which communities and families mediate and moderate the health consequences of recessions for individuals are an important focus for future research. One question is whether families respond differently to crises in their social networks during a major economic downturn, when hardships proliferate and resources are strained but the economy may take the blame, versus crises during more typical economic periods when events such as job loss or housing problems are seen as more isolated, personal troubles. It may also be important to consider what kinds of communities were more health protective during the Great Recession—those in which residents have established strategies for surviving lean times, or those in which residents have more personal resources but are “falling from grace” (Newman 1999) for the first time. Researchers could also explore what happens to neighborhood social resources in recessions, when residents experience employment and financial uncertainty, and then as macroeconomic conditions recover.

Complexity, Temporality, and Agency

One difficulty in assessing the health consequences of recessions is that shocks to individuals may occur in multiple domains and could unfold over a long period via a complex chain of linked events and mechanisms. However, most past studies consider only one domain and a short period of observation, focusing on the health consequences of labor market problems or housing instability, for example, but not both. This approach is problematic because the total impact of a recession on health could be underestimated, and our understanding of the impact of any particular event may be biased, if we ignore the nonindependence of events. However, taking account of multiple shocks and their causal interrelationships, such as a cascade of events linking job loss to financial strain to falling behind on payments and experiencing foreclosure, and further linking this chain to changes in stress or consumption behavior that more directly influence health require extremely rich data, long follow-up periods, and complex longitudinal analytic techniques. Sociologists have made empirical and theoretical strides in understanding the long-term socioeconomic scars of a catalyzing shock such as job loss and the way that consequences are conditional on differences in contextual conditions, such as welfare state environments (DiPrete & Eirich 2006, Gangl 2006; for a review, see Brand 2015). Others have applied theory about cumulative advantage and disadvantage processes, with sensitivity to the appropriate timing of social and biological processes, to understand diverging health trajectories over the life course (as discussed in Elo 2009). Researchers have also recognized the importance of taking account of bidirectional associations between social and economic shocks and health. Poor health may put

some individuals at a greater risk of events such as job loss or make them more vulnerable to the stressful consequences of a recessionary environment, and these exposures may further affect subsequent health, net of the association generated by health selectivity (e.g., Burgard et al. 2007). These approaches could provide a conceptual framework within which to consider cascades of recession-related events and mechanisms across multiple domains as they unfold over the life course and interact reciprocally with health change.

Moreover, the Great Recession was distinctive. Labor market volatility was occurring against a backdrop of housing and financial market collapse. During a milder recession, it may be useful to conceptualize job loss as the first event in a causal cascade that eventually leads to adverse health outcomes. This chain-of-events conceptualization may be a less useful model in an economic climate that simultaneously endangers an individual's ability to keep a job, housing, and access to medical care, all for reasons related to concurrent macroeconomic processes, not because of the way an individual encounters and navigates them over time. For example, an individual could experience a layoff while declining home values in her community are generating stress and her ability to obtain mental health care is worsening because of staff cuts at her provider's facility. Multiple hardships that have no causal relationship with each other at the individual level might be more aptly described as clusters of shocks rather than cascades. Researchers studying the health effects of the Great Recession may encounter both the conventional cascading chains-of-events and clusters of shocks, increasing the theoretical and analytic challenges.

The study of individual choices in response to recessionary shocks also deserves further attention. Researchers focused on changes in health-related behaviors in economic downturns have discussed heterogeneous responses; for instance, whereas those who drink casually might decide to tighten their budgets by foregoing wine with dinner, established drinkers appear to drink at even riskier levels when times are bad, possibly as a coping mechanism (Dee 2001). A greater sensitivity to heterogeneous responses and the role of vulnerability or personal characteristics in explaining them might be more broadly applicable to understanding how people differentially weather the shocks they experience in recessions. For example, one estimate suggests that the US expansion of the maximum duration of unemployment insurance kept more than one million recession-struck Americans from losing their homes to mortgage defaults (Hsu et al. 2014). However, for reasons that are not well understood, not all eligible individuals utilized extensions to unemployment insurance, housing protection programs, or other recession-related interventions. Whether or not helpful policy interventions occur, individuals draw on an array of strategies and informal resources from their social networks. A deeper understanding of the heterogeneous strategies people use to cope with economic shocks would improve evaluation of recessionary interventions and would identify the reasons that these interventions fail to reach some eligible parties. It would also shed light on why some individuals or groups were able to quickly recover from labor market dislocations, whereas others continued on a downward slide toward home loss or foregone medical care, for example.

Further research is thus needed that takes a period view of how recessions impact health across the population in the very short term, and that more carefully considers the mechanisms operating across multiple domains and at the individual, family, community, and aggregate levels. At the same time, there is a need for more research taking a longer-term, cohort view of the impact of the experiences of individuals who go through an experience at the same age or life course stage, and the complex and potentially heterogeneous trajectories of events and health that follow. For example, one cohort of interest is US adults who were nearing or just past retirement age when the Great Recession struck. Unexpected shocks to wealth were particularly dramatic for older Americans whose savings were concentrated in equities; on average, the value of retirement savings accounts dropped by 30% between October and December 2008 (McInerney et al. 2013).

Although loss of savings would be distressing at any age, it may have more serious consequences for the well-being of older adults who have less time to financially recuperate (Butrica et al. 2010), may still have financial obligations including mortgages and support of young adult children, and are at greater risk of already coping with preexisting health problems. A national survey of older Americans showed a significant increase in the proportion of the population 50 and above reporting they intend to work past the age of 62 after the market crash (Goda et al. 2011). It remains to be seen whether these plans will translate to an increase in realized retirement age, and what the complex consequences of these changes will be for labor market attachment, financial strain, consumption behaviors, and health trajectories.

The question of how long-term a view is long enough is complex, because the biologically appropriate lags vary depending on the health outcome in question, and the number of mediating and moderating factors, as well as competing exposures and explanations for health change, increases with follow-up length. Such difficulties challenge research on important topics related to the intra- and intergenerational effects of recessions (Elder & Caspi 1988), but examples of research on the health consequences of being conceived (Dehejia & Lleras-Muney 2004), leaving school (Hessel & Avendano 2013), being in the midst of one's career (Leist et al. 2014), or entering the years close to retirement (Coile et al. 2012) during a recession indicate the potential benefits of future research on the long-term impacts of experiencing a recession at critical points in the life course. Such efforts are needed, as conclusions may depend on the period over which consequences are measured. A longitudinal study of older Americans showed that for those who experienced a recession in their late fifties, compared with those who did not experience a recession at that age, any short-term positive benefits were more than offset by longer-term health deterioration resulting in poorer survival prospects (Coile et al. 2012).

CONCLUSION

The Great Recession was unique not only for the depth of the labor market disruptions, but also because it was catalyzed by crises in the US housing and financial markets that generated a wave of foreclosures and widespread losses of wealth and long-term financial security. Many individuals were affected by hardships in multiple domains of life via events that directly affected them or via shocks to people in their families, networks, and communities. Research based on past fluctuations of the business cycle suggested that mental health would decline, and evidence from the Great Recession bears this out in higher rates of suicide and heightened levels of distress across many wealthy societies in the immediate wake of the downturn. The findings for physical health have been less clear and will take longer to unfold. At the aggregate level, a long-standing pattern of procyclical overall mortality in the United States appears to have weakened in recent years, and there is little evidence for a Great Recession-induced decline in deaths, except for traffic-related fatalities. The extent to which this recession marks a turn toward more consistently negative consequences for health and well-being is an important question that sociologists can help answer.

Future research is needed to assess the longer-term and cause-specific patterns of illness and death that will emerge, and to show which macro- and micro-level mechanisms are most important in explaining these patterns. We have highlighted the theoretical and analytical perspectives that sociology can offer to help tackle this substantial research challenge. Future work should endeavor to measure experiences across domains, from personal work history, to housing and wealth trajectories, to evolving community social conditions, as well as attend to the modifying effects of factors including gender, race/ethnicity, socioeconomic position, life course stage, and the prevailing policy environment. We need new data sources and creative modeling solutions that can

better account for multiple shocks and individual responses over time and the way these intersect with and are affected by individuals' health trajectories. The evidence base would benefit from novel uses of quantitative data, such as increased use of biomarker data to track health change and merging of environmental measures with aggregate, community, and household-level social and economic data. It would also benefit from greater attention to qualitative studies of process and decision making in the face of recessionary events. Such developments would not only provide a more complete understanding of the links between the business cycle and well-being, but would also enhance the broader field of research on the social factors influencing health and health disparities in an era of expanding social inequality and instability (Danziger 2013, Western et al. 2012).

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