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The Covid-19 pandemic is exacerbating social and economic inequality in the United States, through both direct health and economic pathways. At the same time, inequality is likely worsening the health effects of contracting the virus. The combination of these two effects could create a continuing cycle that may have very long-term consequences.

The Covid-19 crisis is exacerbating social and economic inequality

The Covid-19 pandemic has created a public health crisis that is increasing social and economic inequality. Unequal access to health care may mean that the cost of getting sick is higher for those with the fewest resources to pay for it. Lower-income workers are also considerably less likely to have paid sick leave, so may face lost wages or even loss of employment if they miss work due to illness. The lack of in-person school and other childcare may limit options for parents who rely on these resources to be able to work, and also widen racial achievement gaps in the longer term. Those with fewer resources may be less able to access online education and parents who must work to support their families may have less ability to facilitate their children's education. Taking children out of school may also increase food insecurity for families that rely on free and reduced-price breakfast, lunch, and even dinner.

The economic crisis resulting from Covid-19 is also having profound effects on social and economic inequality. For example, while the federal government did provide economic relief to most working individuals, not everyone can access this assistance in a timely manner. Even with government assistance, lower-income families may not have sufficient savings to weather a lengthy period of low or no earnings. Low-wage, minority, and less-educated workers have also been particularly susceptible to unemployment as a result of the Covid-19 recession.¹ Small businesses that are owned by people of color or other marginalized people may be less likely to have an existing relationship with a bank and may have a harder time applying for and obtaining emergency federal small business loans.

Social and economic inequality may contribute to unequal health effects of Covid-19

The Centers for Disease Control and Prevention (CDC) finds that longstanding inequality has resulted in an increase in the risk of contracting Covid-19 and of experiencing severe illness for some members of racial and ethnic groups regardless of age, including African Americans, Hispanics, and American Indians.² These findings are consistent with research on the social determinants of health, which suggests that those with low socioeconomic status are more likely to have the chronic health conditions that exacerbate the effects of Covid-19, and to develop them at an earlier age. Workers in low-paying service jobs are likely to have contact with more people than do those who are able to work remotely—including during their commute, if they rely on public transportation—and thus may be at greater risk of contracting the virus. People with higher incomes may be able to work from home and thus limit their exposure. People with lower incomes may also not always have a safe home to stay in.

The articles in this issue cover research on three topics that are relevant to the Covid-19 pandemic

The first article examines the role of administrative burden—the barriers that people may encounter when dealing with the government—in constraining access to pandemic relief. Pamela Herd and Donald Moynihan argue that the programs through which assistance is extended, such as unemployment insurance and the Supplemental Nutrition Assistance Program (SNAP, formerly known as the Food Stamp Program), were set up in a way that

made these benefits challenging to access even before the pandemic. This has resulted in overloaded systems and great frustration for users as so many more people become eligible. The authors explore the consequences of administrative burden and offer suggestions for making social safety net programs easier to access in the future.

The second article summarizes a study looking at how food insecurity is related to public policies and economic characteristics. Judith Bartfeld and Fei Men find that the following are linked to higher food security: (1) policies that increase access to SNAP; (2) policies outside of food assistance—including length of unemployment insurance availability, generosity of EITC and potentially higher minimum wages; and (3) lower unemployment. These findings suggest that strengthening the safety net, including both food assistance and broader programs and policies that raise incomes for low- and moderate-income households, could help reduce disparities in food insecurity risk that have been heightened by Covid-19.

The third article looks at the effects of interpersonal racism on health. Bridget Goosby, Jacob E. Cheadle, and Colter M. Mitchell review research on stress-related biological mechanisms that link interpersonal discrimination to health patterns for African Americans. They conclude that exposure to perceived discrimination triggers a stress response, and when this exposure is chronic, the stress response creates wear and tear on the body, increasing the risk of adverse health outcomes and exacerbating racial health disparities. They suggest that disproportionate risk of adverse health outcomes helps explain the disproportionate effect of Covid-19 on African Americans. ■

¹L. Bauer, K. E. Broady, W. Edelberg, and J. O'Donnell, "Ten Facts about COVID-19 and the U.S. Economy," The Brookings Institution, Washington, D.C., September 17, 2020, available at <https://www.brookings.edu/research/ten-facts-about-covid-19-and-the-u-s-economy/>

²Centers for Disease Control and Prevention, "Coronavirus Disease 2019 (COVID-19): Health Equity Considerations and Racial and Ethnic Minority Groups," July 24, 2020, accessed September 15, 2020, at <https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/racial-ethnic-minorities.html>

Administrative burdens in the time of Covid-19

Pamela Herd and Donald Moynihan

TAKEAWAYS

It is difficult for individuals to get needed assistance from most U.S. social safety net programs due to their design.

The Covid-19 crisis has strained programs beyond the breaking point, with many people unable to quickly apply for and receive needed unemployment benefits and public assistance.

Social Security in the United States and safety nets in Europe offer models for programs that deliver benefits with little burden on the individual.

Shifting administrative burdens from individuals to the government would get benefits to more people more quickly.



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The Covid-19 crisis has left tens of millions of Americans out of work. The social safety net is intended to help soften the blow for those in economic need, with programs that include unemployment insurance, Medicaid, and the Supplemental Nutrition Assistance Program (SNAP, previously called the Food Stamp Program). For example, as shown in Figure 1, weekly initial claims for unemployment insurance rose precipitously early in the pandemic, and, even months in, exceeded the peak number of initial claims during the Great Recession. Federal legislation such as the Coronavirus Aid, Relief, and Economic Security (CARES) Act has expanded some of the available benefits. Still, many who may be eligible for this relief are finding that the gap between the promise of safety net programs and the reality of their implementation makes it difficult to obtain assistance. While we have previously documented administrative burdens in government programs, it is clear to us that a crisis response built on existing systems will fall short.¹

Based on our prior research, we expect that in the short term the way services are provided in the United States will lead to unmet needs and profound frustration among individuals, will increase inequality, and will hamper economic recovery. If we take these concerns seriously, the long-run outcome should be a reconfiguration of how the government administers safety net programs in the United States. In this article, we detail different types of administrative burdens, describe their origins and effects, and offer some suggestions for how to reform systems to more effectively provide help to those who need it.

Defining administrative burdens

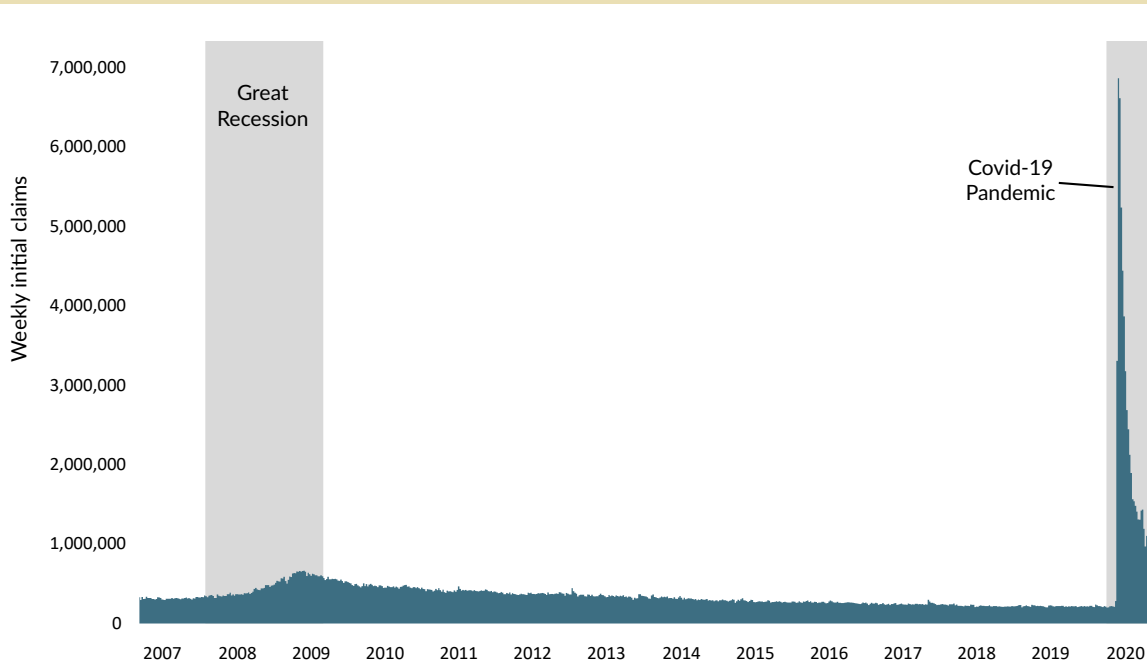
The term “administrative burdens” refers to the onerous experiences that people encounter when dealing with the government. The particular barriers we are concerned with in this article are those faced by individuals when they attempt to access the U.S. social safety net. These burdens may take several forms, including learning costs, compliance costs, and psychological costs (see text box on types of administrative burden).

Learning costs

Individuals experience learning costs when they have to figure out what government programs are available and how to apply for them. To successfully access and maintain benefits, individuals need to learn whether they are eligible for a particular program, what the benefit would be, which forms need to be completed, what documentation is required, and whether an application can be completed online or requires going to a government office. Obtaining this information is not necessarily straightforward. Learning costs may mean that someone: is unaware of a program they may be eligible for; incorrectly believes they are not eligible for a particular program; underestimates the value of a benefit; or is prevented from being able to figure out how to apply for a program that would benefit them.

An example of the effects of learning costs can be seen in the extent to which eligible families receive the Earned Income

Figure 1. Weekly initial claims for unemployment insurance rose precipitously early in the pandemic, and even months in, exceeded the peak number of weekly claims during the Great Recession.



Note: The Great Recession officially began in December 2007 and ended in June 2009.

Source: Unemployment initial claims from U.S. Department of Labor, Office of Unemployment Insurance, Weekly Claims Data, retrieved September 14, 2020 from: https://oui.doleta.gov/unemploy/claims_arch.asp; recession data from National Bureau of Economic Research, U.S. Business Cycle Expansions and Contractions, retrieved September 14, 2020 from: <https://www.nber.org/cycles.html>.

Tax Credit (EITC), a refundable tax credit for low- to moderate-income working people, particularly those with children. An estimated one-quarter of those who are eligible for the EITC do not receive it.² Research suggests that low awareness of the program contributes to lower take-up.³

Learning costs increase when there are changes in policy, especially when a number of changes are implemented over a short period of time, as is the case with rule changes resulting from federal and state coronavirus relief legislation.

Types of administrative burden

Learning costs—figuring out what government programs are available and how to apply for them.

For example, learning costs may mean that someone: is unaware of a program they may be eligible for; incorrectly believes they are not eligible for a particular program; underestimates the value of a benefit; or is prevented from being able to figure out how to apply for a program that would benefit them.

Compliance costs—administrative rules and requirements that must be followed in order to complete the application process; “red tape.”

For example, compliance costs may include filling out forms, providing needed documentation, and paying costs associated with applying for or continuing to receive benefits such as the costs of traveling to an office to obtain or submit needed documentation, or hiring a lawyer or other professional to assist in the application process.

Psychological costs—these may include stigma, loss of autonomy, and stress or frustration.

For example, stigma may be experienced when participating in a program viewed negatively by the public; loss of autonomy when public employees have the power in the application process; and stress or frustration when dealing with processes that are difficult to negotiate, particularly when the individual's financial security is on the line.

Compliance costs

Individuals experience compliance costs when they have to follow administrative rules and requirements in order to complete the application process. Compliance costs include filling out forms, providing needed documentation, and paying costs associated with applying for or continuing to receive benefits such as the costs of traveling to an office to obtain or submit needed documentation, or hiring a lawyer or other professional to assist in the application process. The burden these costs impose range from fairly trivial to rather significant. For example, whereas all documentation required for the Social Security program (described in more detail below) is collected by the government and the application process is straightforward, the EITC can only be obtained by filing income taxes (even when no tax is owed). The difficulty of completing and filing tax forms prompts many to use tax preparers who charge a fee.

Psychological costs

Finally, some individuals also face psychological costs when applying for and receiving benefits. Examples of psychological costs include the stigma of participating in a program viewed negatively by the public, the loss of autonomy when public employees have the power in the application process, and the stress or frustration of dealing with processes that are difficult to negotiate particularly when the individual's financial security is on the line. For example, in a survey of individuals who were likely to be eligible for food stamps but were not receiving benefits, 27 percent said they would not apply. Among those individuals, nearly half reported factors related to avoiding stigma, such as not wanting people to realize that they were poor.⁴

Burdens affect whether people can access services that they need.

Why burdens matter

There are times when the government has a legitimate interest in imposing costs on individuals, such as administrative requirements that ensure that poverty-based policies serve only those who are poor. However, there are also times when these costs are too high relative to the legitimate function that they serve, such as requiring someone to file a form in person, when the same function could be served online or over the phone. Some burdens are unnecessary because they address problems that do not exist, such as adding fraud-prevention measures when the level of fraud is already extremely low.

The importance of administrative burden has been highlighted by the pandemic, as many who are newly eligible for public assistance after losing income face the often-frustrating task of trying to access that assistance (see example in text box).

Accessing public assistance during the coronavirus crisis

An Arizona worker lost her job in March when the restaurant where she worked laid off staff members in response to the coronavirus crisis. She and her young daughter are eligible for public assistance, ranging from food stamps to Medicaid, to help soften the blow. But after she spent hours filling out forms and uploading dozens of documents, the online system crashed. "I want to cry," she texted her aunt. "They make it impossible to actually get assistance."

Burdens are consequential

The effects of administrative burdens are consequential for those who experience them. Burdens affect whether people can access services that they need. Administrative burdens can also undermine key policy goals. While legislation such as the CARES Act was intended to allay the economic and health consequences of the pandemic, this relief has not always reached the people to whom it was targeted. Part of the reason for this is that coronavirus relief was structured to use an existing set of social welfare programs that have high burdens.

Unemployment insurance is a prime example of a social welfare program stressed beyond its limits during the Covid-19 pandemic due to its high level of administrative burden. While unemployment insurance has some federal funding, states have a great deal of control in setting rules for who qualifies and what must be done to continue to receive benefits. There is, consequently, a lot of variation across states in the level of administrative burden faced by potential applicants. Even prior to the pandemic, only about three-quarters of those eligible for unemployment insurance received benefits, with a great deal of variation between states. The state systems that are used to administer the program were not built for the volume of applications received during the pandemic; as layoffs rose quickly in March 2020, these systems became almost immediately overwhelmed. One reason why these systems collapsed was the level of burden already present, which demanded more documentation than was possible to process when mass unemployment struck. Florida's unemployment insurance system provides one example of this (see text box).⁵

Another reason for the inability of states' unemployment systems to quickly implement federal coronavirus relief provisions for unemployment insurance was that the CARES Act added a new category of beneficiaries—the self-employed, independent contractors, and gig-economy workers. This addition meant that states needed the ability to process different types of documentation than had previously been required. While the CARES Act was signed into law on March 27, 2020, the states did not receive guidance on the Act's Pandemic Unemployment Assistance program until April 5, 2020. In most states, benefits were not extended to the new category of beneficiaries until late May 2020.

Another provision of the CARES Act is the Paycheck Protection Program, which was intended to provide loans to small business, with the loan amounts forgivable if at least 60 percent was used to cover employee salaries. However, the experience of small business owners trying to access this program turned out to be very similar to the experience of unemployed people trying to access unemployment insurance, including broken websites, confusing instructions, and the sense that the government did not really want to help.

Burdens affect participation

Administrative burden can mean that some people who are eligible for a program do not receive it. The SNAP program, which has

Multiple burdens may be applied in a single program

As of May 12, 2020, Florida had paid benefits to just over one-quarter of the 1.9 million people who had applied for unemployment insurance since mid-March of that year.

It took more than two months for the state to adapt its computer system to administer the 13-week federal increase in unemployment benefits.

Applications for unemployment insurance were only available online, which may have made the process more difficult for those without reliable internet access.

These difficulties in getting unemployment benefits out to those who needed them stemmed from years of putting mechanisms in the system that were designed to control costs, and that effectively increased the administrative burden, making it harder both to apply and to provide the documentation needed to continue to receive benefits after initial approval.

experienced increased demand during the pandemic, is a clear example of this. SNAP is an efficient way to quickly get money to people in need, and it provides an effective stimulus in a slowing economy. In fact, every additional dollar spent on SNAP during the Great Recession, when SNAP benefits were expanded, generated \$1.74 in economic activity.⁶ But instead of just increasing SNAP benefits, the CARES Act created a new food relief program targeted at children eligible for free or reduced-price school meals. States had to create entirely new administrative structures to implement the program. Not surprisingly, after three months, just 12 states had started the program, and only 15 percent of eligible children had received benefits.⁷

Coronavirus relief provisions did provide states with some flexibility in SNAP administration. For example, states were allowed to eliminate in-person visits and delay recertification for SNAP, though not all states reduced these burdens.⁸ However, this flexibility was temporary, lasting only through August 2020.⁹

Medicaid is another program for which demand has increased as a result of the pandemic. Since the majority of Americans get health insurance through an employer, loss of employment during the pandemic has resulted in millions losing their insurance. Many of these people will be trying to get access to Medicaid, which has very high levels of administrative burden in some states, including difficulty in accessing information about the program, and in providing all the documentation needed to apply. As a result, take-up of Medicaid varies significantly across states and eligibility groups, but on average, 30 percent of those eligible and uninsured do not receive benefits.¹⁰

Providing the documentation to show that one is below the eligibility threshold inherently necessitates a higher level of burden than a universal program designed to be accessible to nearly everyone.

Burdens are distributive

The goal of most social welfare policies is to reduce poverty and inequality; administrative burdens may undermine that goal because the neediest individuals may lack the resources necessary to apply. An individual's ability to navigate burdens can be influenced by factors such as their level of education, economic resources, health, language skills, and time available to devote to such tasks. For example, there is evidence that people with lower levels of these resources are less likely to participate in programs for which they are eligible.¹¹ While social welfare programs do greatly reduce poverty—without them, the poverty rate in the United States would be much higher—individuals generally have to document their eligibility to receive them.¹² Providing the documentation to show that one is below the eligibility threshold inherently necessitates a higher level of burden than a universal program designed to be accessible to nearly everyone.

While individuals can often access a third party to help them navigate burdens, these services come at a cost. As mentioned earlier, many who apply for the EITC use a tax preparer. In fact, a 2014 study found that about 57 percent of people who claimed the EITC used a tax preparer.¹³ Each year, about 5 percent of the total amount of EITC dollars paid out go to tax preparers; in 2013, this amounted to an estimated \$2.75 billion.¹⁴ Since tax preparers benefit from the burdens in the tax system, they have an incentive to keep administrative complexity in place.

Burdens are constructed

Burdens, like public policies themselves, are often the product of deliberate administrative and political choices. In some cases, policymakers may fail to understand the consequences that follow. Often, however, burdens are used as a policy tool in order to achieve an ideological goal. The Florida unemployment insurance system, highlighted above, again serves as an example. States set the amount of unemployment insurance that is offered, and the maximum in Florida is low—\$275 per week—and has been at this level for over two decades. Prior to pandemic relief legislation, most states offered a standard maximum of 26 weeks of benefits, but Florida’s maximum is only 12 weeks. Florida had also altered its enrollment processes in ways that made the process burdensome and complicated, including implementing a flawed online application process. The current Governor acknowledged the intentionality of the hassles created by his predecessor, saying the goal of the system was, “Let’s put as many kind of pointless roadblocks along the way, so people just say, oh, the hell with it, I’m not going to do that.”¹⁵ Florida is not the only state with systems that make it difficult for people to access and retain benefits; in New York, some unemployed workers were required to fax documents as part of the application process.¹⁶

Strategies to reduce administrative burdens include: asking policymakers to consider both benefits and costs when assessing how much burden a given program should have; using tools such as technology, automation, and personal assistance; and shifting the burden to the government.

How to reduce burdens

We identify a number of different strategies to reduce administrative burdens. These include the following: asking policymakers to consider both benefits and costs when assessing how much burden a given program should have; using tools such as technology, automation, and personal assistance; and, critically, shifting the burden to the government.

Assessing benefits and costs of burdens

One key way to reduce administrative burdens is to ask public officials to consider both benefits and costs when evaluating burdens. Currently, states are required by the federal government to assess and report on how much fraud and abuse exists in a given program by providing data on individuals who are receiving benefits for which they are ineligible due to intentional acts of fraud or inadvertent mistakes. States are not, however, required to report in a systematic way on the proportion of eligible people who are *not* receiving benefits. Most programs have relatively low rates of improper benefit receipt. For example, the SNAP overpayment rate is 5 to 6 percent.¹⁷ In comparison, even in very well-targeted programs like SNAP and the EITC, about 20 percent of eligible people do not receive a benefit. For unemployment insurance in the early months of the pandemic, when unemployment skyrocketed and states struggled to meet the need, this rate was substantially higher.

Technology

Technology can both reduce and increase burden. For example, most people find it easier to fill out a form online than to fill out and mail a paper form, thus decreasing burden. However, technology can also be explicitly used as a burden. For example, if program applications can *only* be accessed online, this would reduce access to the program, since some people lack technological literacy, and those in rural areas and with lower incomes may lack internet access. Technology will only reduce burden if policymakers carefully consider how it can be used to reduce burdens, by, for example, using administrative data to pre-fill forms.

Automation

Automation can be an important tool for reducing burden. Researchers find that automatically enrolling people in programs (that is, allowing people to “opt out” rather than requiring them to “opt in”) dramatically increases participation.¹⁸ Existing government databases could be used to automatically enroll those who are eligible; this would greatly reduce documentation requirements for individuals. This approach would require both the necessary administrative capacity and the willingness to implement such a system. One suggestion for using automation to facilitate pandemic relief comes from Representative Pramila Jayapal of Washington State, who has proposed that the Treasury Department use tax return data from 2019 to estimate three months of employer wage costs, and provide that money in the form of a grant to businesses that could use it to continue to pay their workers.

When help is required

While approaches such as simplifying forms and doing better outreach can decrease burden, in some cases, the most effective strategy is simply to have someone else help complete application forms rather than putting this responsibility solely on individuals. This kind of personal assistance can have a large effect on participation; a 2016 survey of those eligible for health insurance under the Affordable Care Act found that 77 percent of those who received assistance ultimately enrolled, compared to 60 percent of those who did not.¹⁹ To truly reduce burden, this assistance would need to be provided without cost to the applicant, unlike, for example, paid tax preparers who help people access the EITC.

Shifting the burden to the government

Shifting the burden away from individuals and to the government can ensure that people receive the assistance for which they are eligible. This may be necessary because small changes to reduce learning and compliance costs will not always be enough to sufficiently reduce administrative burden. Social Security is one of the best examples of government bearing the

Social Security benefits are relatively easy to access

As documented in our book on administrative burden, Social Security stands out as program that is effective in quickly getting benefits to those who need them. For example, after September 11, amidst unimaginable grief, victims' families found themselves awash in paperwork—applying to everything from workers' compensation to private charitable support and life insurance. Meryl Mayo lost her husband in the World Trade Center. In the days following his death she spent countless hours finding out what financial resources she was eligible for, filling out forms, pulling together documentation, and dealing with officials who offered varying levels of help and sympathy. “Everything was scattered all over the place. And then I thought about all the things I had to do and all the laundry that was overflowing from the hamper. And I felt so overwhelmed that I broke down so badly, I couldn't even catch my breath. I sat down on the floor, just like, ‘I have to do this. I have to cry now.’ And I did.” Yet Mayo remembered one application process as being “refreshingly simple”: Social Security. She just had to make a phone call and fill out a simple form online, or if it was more convenient, she could get help at one of the 1,300 Social Security Administration field offices spread throughout the country. The first Social Security checks to victims' family members were mailed out on October 3, 2001.

burden. The documentation required to determine eligibility and benefit amounts for Social Security is complex, and on a par with that required for safety net programs such as SNAP. However, for Social Security, all the burden for collecting this documentation falls on the government rather than the individual. The federal government collects earnings information over an individual's working life; once someone is ready to apply, after retirement or the death of a spouse, the application process requires only one simple form that can be quickly completed online or at one of many Social Security offices. After the September 11th attacks, many people who lost family members were faced with the daunting task of identifying and applying for available financial assistance. Social Security stood out as the lone program that was easy to access and quick to provide benefits (see text box).

Conclusions

The government's approach to delivering pandemic relief has resulted in many people waiting a long time for needed benefits. This failure will likely have continuing consequences like, for example, people being evicted for failure to pay rent. What could have been done differently? An alternative path was followed in many European countries and was proposed by some in the U.S. Congress: the government guaranteed payroll for small business so that individuals kept their jobs and continued receiving their salaries. While pandemic relief essentially created a new program within SNAP, a more effective alternative would have been to simply increase benefit amounts. These are examples of policy choices that made coronavirus relief more difficult to access, choices based on the assumption that administrative complexity is preferable to ease of access. Will the experience of the Covid-19 relief lead to a re-evaluation of this approach? Perhaps. While the costs of a dysfunctional administrative system are easy to ignore when they are imposed on other people, a public newly aware of administrative burdens as a result of their efforts to seek relief during the crisis may demand something better. We encourage our political leaders to reconstruct policy to ensure a more equitable distribution of aid. ■

Pamela Herd and Donald Moynihan are Professors at the McCourt School of Public Policy at Georgetown University and are IRP Affiliates.

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Policy and economic factors that affect food security

Judith Bartfeld and Fei Men

TAKEAWAYS

Policies that increase access to SNAP are related to reduced risk of food insecurity, particularly among economically vulnerable households.

More widely available school breakfast may help offset food insecurity.

Policies outside of food assistance—including length of unemployment insurance availability, generosity of EITC and potentially higher minimum wages—are linked to food security.

A higher unemployment rate is strongly linked to food insecurity.

Strengthening the safety net—including both food assistance and broader programs and policies that stabilize and raise incomes for low- and moderate-income households—could help protect the well-being of vulnerable families during Covid-19 response and recovery.



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Even prior to the Covid-19 pandemic, food insecurity—the lack of consistent access to enough food for an active, healthy life—was an issue for many U.S. households. In 2019, 10.5 percent of households were food insecure at least some time during the year, including 13.6 percent of households with children.¹ While food is clearly an essential need, it is also one of the first places households may cut expenses in the event of an economic setback. For example, following the Great Recession—when unemployment reached a high of 10 percent—food insecurity reached almost 15 percent, and had only recently returned to pre-recession levels (see text box). Since the onset of the Covid-19 pandemic, when unemployment rates exceeded 14 percent, rates of food insecurity in the United States have risen to unprecedented levels, particularly among families with children. As of the end of April 2020, an estimated 22.8 percent of households were food insecure, including 34.5 percent of households with children.² And food insufficiency, a more stringent measure of food hardship, tripled between 2019 and July 2020.³

The research described in this article, examining the period surrounding the Great Recession, looks at the relationship between policy and economic factors and food insecurity among households with children.⁴ Specifically, we look at state differences in: accessibility of the Supplemental Nutrition Assistance Program (SNAP, previously called the Food Stamp Program); School Breakfast Program availability; maximum unemployment insurance duration; state Earned Income Tax Credit (EITC) generosity; the prevailing minimum wage; and state economic attributes such as the unemployment rate and the proportion of the population with a college degree. We find substantial evidence that state policy and economic factors play a role in food security, and our findings reinforce the importance of a robust safety net in cushioning hardships triggered by the pandemic and its associated economic fallout. Our research questions include:

- How is food insecurity related to policies that affect access to the federal food safety net?
- How is food insecurity related to policies that affect household income—unemployment insurance, the EITC, and the minimum wage?
- How is food insecurity related to state economic characteristics such as the availability of jobs and levels of educational attainment in the community?

The Great Recession officially began in December 2007 and ended in June 2009, though the economic effects were felt well beyond that time. The unemployment rate increased from 5 percent to 9.5 percent over that period, then peaked at 10 percent in October 2009. The poverty rate also rose, particularly for groups that were already at a higher risk of falling below the poverty line. The 2009 American Recovery and Reinvestment Act (ARRA) provided some economic relief, allocating federal funds to preserve existing jobs and create new ones, and to expand unemployment insurance and other safety net programs, including SNAP. ARRA increased SNAP benefits by a set amount for each household size. For example, the maximum monthly SNAP benefit for a family of four rose by 13.6 percent, or about \$80 per month.

Factors related to food insecurity

The U.S. Department of Agriculture (USDA) defines food insecurity as a lack of consistent access to enough food for an active, healthy life.⁵ Using a set of 18 indicators that identify food-access problems or limitations, the USDA further defines four levels of food security:

- **Full food security** means no lack of food access;
- **Marginal food security** means one or two reported indications of a lack of food access, typically anxiety over food sufficiency or shortage of food in the home;
- **Low food security** means three to seven reports of reduced quality, variety, or desirability of diet; and
- **Very low food security** means reports of multiple indications of disrupted eating patterns and reduced food intake.

Households are classified as food insecure if they exhibit low or very low food security. Early research on food insecurity documented the role of low income in combination with other factors such as household structure, employment, education, race and ethnicity, and health and disability.⁶ In seeking to understand why seemingly similar children and households differ in their food security outcomes, researchers have considered factors such as maternal health, mental health, parenting practices, financial behaviors, social supports, and substance abuse.⁷ This work, however, only provides limited insight into understanding differences in food security between places and over time.

Other work has examined how aspects of the economic and policy environments are related to food security outcomes. Economic factors such as higher unemployment rates and lower median wages are both predictive of food insecurity.⁸ State and local economic factors such as higher prevailing rents and energy costs are also associated with a greater risk of food insecurity, although this evidence is from prior to the Great Recession.⁹

While much work has been done on the effects of SNAP participation on those receiving it, relatively little research has examined the effects of specific SNAP policy attributes on food insecurity.

In terms of food assistance policy, while much work has been done on the effects of SNAP participation on those receiving it, relatively little research has examined the effects of specific SNAP policy attributes on food insecurity.¹⁰ A notable exception is research that found the SNAP benefit increase that was part of the American Recovery and Reinvestment Act in 2009 was associated with a decline in food insecurity, while the subsequent phasing out and termination of those benefits by 2013 was associated with an increase in food insecurity.¹¹ Several studies have looked at access to and participation in school meal programs, generally suggesting a beneficial association with food security.¹² Research exploring the link between non-food safety net programs and food security is much more limited, and includes a recent study linking Affordable Care Act Medicaid expansions to reductions in food insecurity.¹³ With few exceptions, the literature on safety net programs and food insecurity has considered programs individually rather than as part of a broader set. An exception is a recent study that found that a higher combined value of benefits available through a package of means-tested income and food assistance programs was associated with a reduction in food insecurity risk among single-parent households.¹⁴

Food insecurity and the broader policy and economic context

Our study adds to the literature by focusing on a broad set of policies including food assistance programs as well as nonfood programs that are an important part of the employment-linked safety net, while also assessing differences by household sociodemographic characteristics. Our time period covers more than a decade, from 2002 through 2014, and includes both the Great Recession and its aftermath. We focus specifically on households with children, both because they are more likely to experience food insecurity than households without children, and because they are subject to different policies than families without children. Because our study spans a period of substantial economic upheaval, and considers a range of policies and programs, it provides insight into how food insecurity may be affected during the pandemic, and the way existing safety net programs could help to cushion food hardships.

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Data and methods

We look at the extent to which households' risk of food insecurity varies by state-level differences in the federal food safety net, policies that affect household income, economic characteristics, and household sociodemographic characteristics. In addition to assessing these risks for our sample of households with children, we look at a subgroup of more economically vulnerable households, for whom the policies we examine are most relevant. Our analyses measure the association between each characteristic and food security, while holding other characteristics constant; our models also control for permanent state characteristics and for time trends that affect all states similarly. Because the economic and policy conditions change within states over the period of the study, we are able to differentiate the role of these factors from the role of unchanging state attributes.

We use data from the Current Population Survey's Food Security Supplement for the years 2002 through 2014, to which we add data on state-year economic and policy characteristics collected from a variety of sources. The survey was administered in December during each of the survey years included here. We limit our primary sample to the 190,554 households with minor children.

We use both annual and 30-day food security measures. The annual measure references the past year, and the 30-day measure references the 30 days preceding the December survey date. The measures indicate whether households were food insecure at any time during the reference period. Thus, all households that were food insecure during the past 30 days were also food insecure during the past year.

Variations in federal food safety net policies

Federal food and nutrition assistance programs address food insecurity by providing in-kind benefits, such as SNAP, that can be used to purchase food; or by providing food directly, such as school meals. Programs vary in important ways among states and over time, leading to substantial differences in program access.

SNAP has a nationwide gross income eligibility threshold of 130 percent of the poverty line, a requirement that net income (defined as income after subtracting certain allowable expenses) falls below the poverty line, and an asset test, whereby assets that could potentially be used to purchase food—such as funds in a bank account—must fall below certain limits. Alternatively, states may opt to use broad-based categorical eligibility—a policy that makes households eligible for SNAP if they meet less stringent state-specific eligibility criteria. This policy can raise the qualifying gross income threshold to up to twice the poverty line and raise or eliminate asset tests, although net income after allowable expenses must still be below the poverty line. States also have a number of options to limit non-income eligibility constraints and to increase the ease of applying for and maintaining enrollment in SNAP for income-eligible households.¹⁵ In this article, we report on two measures of SNAP accessibility:

- state use of broad-based categorical eligibility; and
- a composite measure of SNAP accessibility based on 5 policy options that reduce barriers for those who meet income eligibility criteria, all of which have been found in past research to increase participation.

The options included in the composite measure, all of which have been found in past research to increase participation, include: (1) the waiving of vehicle restrictions on at least one car; (2) the share of employed recipients with certification periods longer than three months (meaning benefits are approved for a longer period at a time); (3) simplified reporting requirements for households with earnings; (4) the waiving of rules banning SNAP receipt among legal immigrant adults who meet all other criteria, and (5) the absence of biometric testing of applicants. We combined these policies into a single index because our analyses showed that they each had similar associations to food insecurity. The value of this measure ranges from 0 to 1 depending on how many of the policies are in effect, where 1 indicates that all five policies are in effect. States differ in whether and in what timeframe they implemented each of these policies over the period of the study. School meal programs include the National School Lunch Program and the School Breakfast Program. Across states and localities, the breakfast program is less consistently available than the lunch program. There is not enough variation in the availability of school lunch to assess its relationship to food security. In this article, we report on one measure of school meal availability:

- The ratio of schools participating in the School Breakfast Program to those participating in the National School Lunch Program.

Variations in non-food policies that affect household income

We focus on three policies affecting household income that vary across states and over time, and that are relevant to economically vulnerable employed and unemployed households.

The EITC subsidizes earnings and increases net income for working households with children earning up to roughly twice the poverty line, depending on household composition. The federal government offers a credit, and many states offer a credit as well. The state credit, when provided, is expressed as a percentage of the federal credit. While the federal credit has been stable over the period of this study, state credits have varied across states and within states over time.

Unemployment insurance temporarily replaces part of the wages of eligible individuals who have lost their jobs and is governed by both state and federal policy. States set their own rules about the amount of work history required for eligibility and, to some degree, about the duration of benefits. The maximum duration of benefits is normally 26 weeks, but is

subject to temporary increases based on state economic conditions as well as occasional time-limited legislation extending the potential benefit duration further. Such an extension happened during the 2002–2004 period when maximum duration reached 72 weeks in some states, as well as during the Great Recession when it reached an unprecedented 99 weeks in some states.¹⁶ The Coronavirus Aid, Relief, and Economic Security (CARES) Act of 2020 extended unemployment insurance duration to a maximum of 39 weeks for most beneficiaries, in addition to providing a shorter-term increase in the benefit amount.

The minimum wage is governed by both federal and state policy, where the higher of the two prevails. Over the time span of this study, the federal minimum wage increased from \$5.15 to \$7.25 per hour. Thirty-three states had minimum wages that exceeded the federal minimum for at least one year, with the highest being \$9.50 per hour in 2014.

Our models use three measures to capture variation in these policies:

- the average maximum benefit duration for unemployment insurance in a state during the year (measured in 10-week increments, such that a one-unit increase in the measure corresponds to 10 additional weeks of available unemployment insurance);¹⁷
- the State EITC rate as a percentage of the federal credit (zero for states without an EITC); and
- the higher of the federal and state minimum wage rates at the end of the year.

Variation in economic characteristics

Relevant economic characteristics include the availability and quality of jobs and the cost of living. The unemployment rate, an indicator of job availability, varied dramatically over the 13 years of this study, with substantial variation across states before, during, and after the Great Recession. Job quality also varied over place and time, as did prevailing wage rates. States differed in cost of living, with stark differences in housing costs across states and over time, which may have affected households' ability to meet food needs. In this article, we report on two economic characteristics:

- the average monthly unemployment rate, and
- the share of the population with a bachelor's degree (to measure the effects of living in a state with higher educational attainment, as distinct from the effect of one's own education level).¹⁸

Variation in sociodemographic characteristics

We consider several sociodemographic characteristics, including highest level of education in the household, race and ethnicity, disability, citizenship, home ownership, and household structure. We do not consider or control for the role of household income because our focus is on policy, economic, and household characteristics that, collectively, may influence both economic wellbeing and food security.¹⁹ This approach provides a clearer picture of the role of non-income factors, because the estimates encompass effects on income that in turn lead to differences in food security.

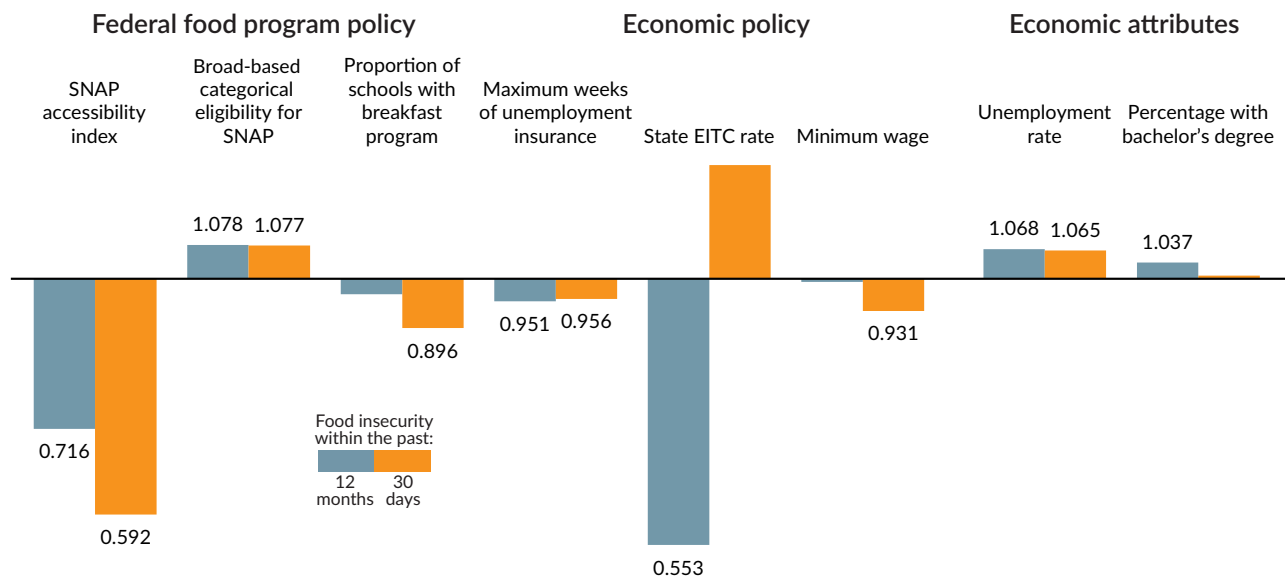
Food security among households with children

For each policy or economic context variable, we calculate odds ratios for food insecurity using both annual and 30-day measures of food security.²⁰ These odds ratios are based on models that also control for the state, the year, and household characteristics. The odds ratios represent the odds that a household will experience food insecurity given a particular policy or economic status, compared to the odds of experiencing food insecurity in the absence of that policy or economic status.²¹

Full sample

Figure 1 shows selected odds ratios of having low or very low food security using annual and 30-day measures.²² We hypothesize that more generous food and economic policies would be associated with decreased odds of food insecurity, while higher unemployment rates and a higher share of households with a college degree (perhaps indicating a higher cost of living) would be associated with increased odds of food insecurity.²³ Bars that are above the line indicate increased odds of food insecurity, while bars that are below the line indicate decreased odds of food insecurity. For example, an odds ratio of 1.05 (above the line) would mean that each unit increase in the given variable is associated with a 5 percent increase in the odds of food insecurity, while an odds ratio of 0.95 (below the line) would imply a 5 percent decrease in the odds of food insecurity. Odds ratios are shown only for statistically significant results; thus, bars without a number indicate an association that is not statistically significant.

Figure 1. Some food assistance policies, more weeks of available unemployment insurance, and a higher state EITC rate are associated with decreases in food insecurity, while higher state unemployment rates, a larger share of people with a bachelor's degree, and, counterintuitively, the use of broad-based categorical eligibility for SNAP are associated with increases in food insecurity.



Notes: Figure shows odds ratios, indicating the likelihood of experiencing low or very low food security relative to high or marginal food security with each policy or characteristic, compared to a one-unit change in that policy or characteristic. Odds ratios are shown only where the ratio is statistically significant at $p < .05$. Schools with a breakfast program is shown as a proportion of those with a lunch program, counted in tens. Maximum weeks of unemployment insurance is counted in tens. State EITC rate represents the state credit as a percentage of the federal EITC credit. The SNAP index indicates the proportion of the five component policies that are in effect (waiving vehicle restrictions on at least one car, approving benefits for more than three months at a time, simplifying reporting requirements for households with earnings, waiving rules banning SNAP receipt among legal immigrant adults who meet all other criteria, and the absence of biometric testing of applicants).

Source: J. Bartfeld and F. Men, "Food Insecurity among Households with Children: The Role of the State Economic and Policy Context," *Social Service Review* 91, No.4 (December 2017): 691-732, Tables 2 and 3.

Federal food program variables

In general, our results show that more generous SNAP policies are correlated with increases in food security. The odds ratio for the composite 5-policy SNAP index implies that implementing all five of the component SNAP policies is associated with a 28.4 percent decline in the odds of annual food insecurity relative to not implementing any of the policies. Evidence that reducing access barriers for income-eligible households is linked to decreases in food insecurity adds to findings from past work that has tied more generous benefit amounts to improvements in food security. Unlike the policies in the SNAP index, the use of broad-based categorical eligibility is, counterintuitively, associated with higher odds of food insecurity. Broad-based categorical eligibility, which encompasses a range of

state-specific increases in gross income or asset limits, expanded rapidly across states during the height of the Great Recession, particularly in states with higher unemployment rates, as evidence of rising food insecurity became a concern.²⁴ To the extent state economic trends impacted decisions to enact broad-based categorical eligibility, the policy may be correlated with higher pre-existing risk of food insecurity.

We also find evidence that more widely available school breakfast may help offset household food insecurity. The share of schools offering breakfast is statistically significantly associated with lower odds of 30-day food insecurity, but not annual food insecurity. The annual measures of breakfast availability and food insecurity include parts of two school years and thus may include periods of differing school breakfast availability. As a result, the 30-day measure may be better able to capture these effects. In additional analyses, we found that the beneficial association between school breakfast availability and food security was limited to children in households with no more than a high school education, and we know from other research that these are the households in which children are more likely to eat school meals.²⁵

All three of the non-food assistance policies that we considered—maximum available weeks of unemployment insurance, state EITC rates, and the minimum wage—are associated with favorable differences in food security.

Economic policy variables

We find evidence that all three of the non-food assistance policies that we considered—maximum available weeks of unemployment insurance, state EITC rates, and the minimum wage—are associated with favorable differences in food security. The maximum number of weeks of available unemployment insurance is significantly associated with a decrease in the odds of food insecurity of 4 to 5 percent for each 10-week increment. This relationship is consistent with prior evidence that income volatility and job loss predict food insecurity.²⁶ This finding is also consistent with recent evidence that individuals who use up their unemployment benefits experience sharp drops in income and spikes in poverty.²⁷ Other work has also shown effects of extended unemployment benefits on outcomes beyond employment, income, and poverty. For example, Hsu, Matsa, and Meler found that extended unemployment benefits prevented an estimate 1.4 million housing foreclosures during the Great Recession.²⁸

A higher state EITC is associated with reduced odds of food insecurity; the odds ratio implies that a state credit that was equal in size to the federal credit would correspond to a 45 percent reduction in the odds of food insecurity using the annual measure. Among the 27 states that had a credit in place at some point over the analysis period, the size of that credit ranged from 3.5 to 50 percent of the federal credit. Using the monthly rather than the annual measure, there is no statistically significant association. Evidence that the generosity of states' EITC matters for food security adds to existing evidence that the value of a combined set of benefits including EITC reduces the risk of food insecurity.²⁹ While we could not look directly at the effects of the federal EITC with the current study design, it seems reasonable that the federal credit for households with children would have effects similar to those of the state credit. There is an extensive body of research that finds the EITC to be beneficial in many areas including levels of unsecured debt, test scores, birth weight, and poverty.³⁰ Research on how households use the EITC may help explain

how it supports food security, since recipients report using their refunds for food, and also deferring other bills in anticipation of receiving refund checks.³¹ This suggests that the EITC may help households to spread spending on more urgent consumption needs throughout the year. It is less clear, however, why EITC effects are only evident for the annual and not the 30-day measure.

A \$1 increase in the hourly minimum wage is statistically significantly associated with a nearly 7 percent decrease in the odds of food insecurity when using the 30-day measure; we find no statistically significant association using the annual measure. This pattern suggests that higher minimum wages may reduce the frequency of food insecurity, so that it is less likely to be experienced in any particular 30-day period. Because of the midyear timing of some minimum wage increases, the 30-day measure also may be better able to detect the effects of minimum wage changes than the annual measure.

Economic attributes

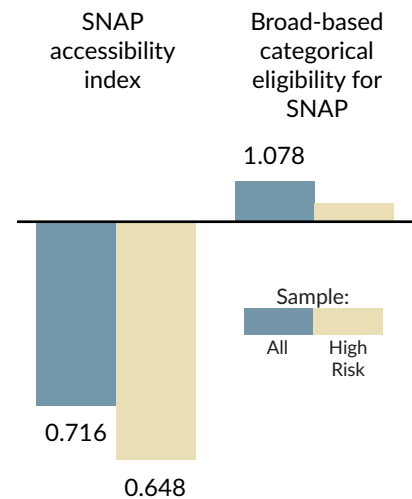
Both a higher unemployment rate and higher educational attainment in a state are associated with higher odds of food insecurity. Each percentage point increase in the unemployment rate is associated with a statistically significant increase in the odds of food insecurity of around 7 percent. Each percentage point increase in the share of people with a bachelor's degree is associated with about 4 percent higher odds of food insecurity using the annual measure; there is no significant association with the 30-day measure. When we look at results by level of educational attainment (results not shown), we find that living in an area with a higher share of people with a bachelor's degree is only associated with increased food insecurity for those who do not, themselves, have any post high school education. It may be that the different cost and opportunity structures in areas characterized by higher education levels put those with less education at a disadvantage.

Our models also indicate that several sociodemographic characteristics are strongly linked to food insecurity (not shown). Food insecurity is much more common among black and Hispanic households as compared to white households; among renters as compared to homeowners; among single-parent households as compared to married parents; and among households with a disabled adult or a non-citizen. It is less common among households with some college, and particularly those with a college degree, as compared to those with high school education or less. These patterns are consistent with past research.

Households at a greater risk of food insecurity

We looked at results separately for an at-risk sample of households—those below 300 percent of the federal poverty line, or roughly half of the full sample. Food insecurity is much more common below this threshold than above it, which may make it easier to detect economic and policy effects. And, because SNAP and the EITC are not relevant for households outside this income range, any true associations with food insecurity should be evident in this subsample. Almost all of the economic and policy variables that were significantly linked to food insecurity in the full sample had a similar association in the at-risk sample; the only difference is in regard to SNAP policies, illustrated in Figure 2. While the SNAP composite index is still strongly associated

Figure 2. The SNAP accessibility index is strongly associated with lower food insecurity for both the full and at-risk sample; however, the counterintuitive positive association of broad-based categorical eligibility with a higher risk of food insecurity is not evident in the at-risk sample.



Notes: Figure shows odds ratios, indicating the likelihood of experiencing low or very low food security relative to high or marginal food security with each policy or characteristic, compared to a one-unit change in that policy or characteristic. Odds ratios are shown only where the ratio is statistically significant at $p < .05$. The SNAP index indicates the proportion of the five component policies that are in effect (waiving vehicle restrictions on at least one car, approving benefits for more than three months at a time, simplifying reporting requirements for households with earnings, waiving rules banning SNAP receipt among legal immigrant adults who meet all other criteria, and the absence of biometric testing of applicants).

Source: J. Bartfeld and F. Men, "Food Insecurity among Households with Children: The Role of the State Economic and Policy Context," *Social Service Review* 91, No. 4 (December 2017): 691–732, Tables 3 and 4.

with lower food insecurity, the counterintuitive positive association of broad-based categorical eligibility with a higher risk of food insecurity is no longer substantively or statistically significant. It appears the association of broad-based categorical eligibility to food insecurity that was seen in the full sample may be spurious, because we expect any true effect should also be evident in this at-risk sample.

Predicted probabilities of food insecurity

To illustrate the importance of economic and policy factors, we predict what annual food insecurity rates would be with and without selected policies, and with different unemployment rates. This helps us to understand how change in each of the dimensions is expected to translate into change in the overall extent of food insecurity, if all other characteristics remain unchanged. We do these simulations for the full sample (all households with children during 2002–2014) and for the at-risk sample (those below 300 percent of the poverty line).

Table 1 shows that the predicted annual food insecurity rate drops for both the full and at-risk samples when we simulate: (1) a one percentage point drop in the unemployment rate; (2) an increase of 10 weeks in maximum unemployment insurance benefit duration; (3) the addition of a state EITC credit; and (4) the implementation of access-enhancing SNAP policies.

A one percentage point drop in the unemployment rate (from 6.2 percent, the average state rate in our sample, to 5.2 percent) reduces the predicted food insecurity rate by about 5 percent in both samples. Increasing the maximum duration of unemployment insurance benefits from 26 weeks to 36 weeks reduces predicted food insecurity by about 2.5 percent in both samples.

To show the potential effect of the state EITC, we simulate food insecurity in the absence of a state credit, and with a credit that is 16.6 percent of the federal credit (the average size among states with a state credit during the time period of our study). In the at-risk sample, for whom the credit is most relevant, the predicted food insecurity rate falls by nearly 9 percent (2.7 percentage points), from 31.0 percent to 28.3 percent.

Finally, we show the potential effect of more accessible SNAP policies by comparing the predicted food insecurity rate when none of the access-enhancing policies are in place (that is, when states do not implement broad-based categorical eligibility or any of the five policies included in the SNAP index) with food insecurity when all of the six policies are implemented. In the at-risk sample, for whom SNAP policies are most relevant, the difference is large, with predicted food insecurity declining by nearly one-quarter, from 36.2 percent to 27.8 percent. These results demonstrate that there is considerable leverage for alleviating food insecurity among at-risk households by reducing barriers to getting and keeping SNAP. Collectively, these results illustrate that there are multiple policy levers for increasing food security, spanning both the food and income safety nets and targeting employed as well as unemployed parents, and that they are particularly germane to the families at greatest risk for food insecurity.

Table 1. The predicted food insecurity rate declines—among all families and among at-risk families—when the unemployment rate is lower, unemployment insurance or EITC policies are more generous, and SNAP is more accessible.

	Unemployment rate		Maximum weeks of unemployment insurance		State EITC rate		Access-enhancing SNAP policies in effect	
	6.2%	5.2%	26	36	0%	16.6%	None	All
Annual food security measure								
Full sample of households with children	17.9%	17.0%	19.7%	19.2%	18.9%	17.6%	20.9%	17.7%
Families at higher risk of food insecurity	29.3	27.9	32.1	31.3	31.0	28.3	36.2	27.8

Note: Families at higher risk of food insecurity are those with incomes below 300 percent of the poverty line. State EITC rate represents the state credit as a percentage of the federal EITC credit. Access-enhancing SNAP policies include broad-based categorical eligibility, waiving vehicle restrictions on at least one car, approving benefits for more than three months at a time, simplifying reporting requirements for households with earnings, waiving rules banning SNAP receipt among legal immigrant adults who meet all other criteria, and the absence of biometric testing of applicants.

Source: J. Bartfeld and F. Men, "Food Insecurity among Households with Children: The Role of the State Economic and Policy Context," *Social Service Review* 91, No.4 (December 2017): 691–732, Tables 3 and 4.

Policy implications for Covid-19 recovery

While this study precedes the Covid-19 pandemic, our findings shed light on the ways in which the pandemic threatens food security, as well as on the potential to cushion the impact through strengthening existing safety net programs.

Policy choices can help the food and nonfood safety net to better protect against food insecurity during Covid-19 response and recovery.

Our finding that the unemployment rate is a strong predictor of food insecurity is consistent with a robust body of past work, and is particularly relevant in light of the sharp spike in unemployment resulting from the Covid-19 crisis. This is compounded by children's loss of regular access to school meals due to school closures, which in many districts are continuing into the current school year.

In the face of these threats, our research suggests that policy choices can help the food and nonfood safety net to better protect against food insecurity during Covid-19 response and recovery. SNAP is the linchpin of the food security safety net. An important takeaway from our research is that removing non-income eligibility constraints and procedural hurdles can greatly strengthen the capacity of SNAP to reduce food insecurity among vulnerable households. This complements existing research that highlights the benefits to food security stemming from more generous benefit amounts. These findings seem particularly relevant in the Covid-19 context, in which economic fallout from the pandemic has created millions of new potentially SNAP-eligible households. The USDA approved short-term waivers in many states that streamlined the application and certification process during the initial months of the pandemic, although some of these have now ended; and most work requirements normally in effect for adults without dependents are temporarily waived. Continued efforts to minimize barriers to SNAP are critical to maximizing the reach and impact of the program.

Our results also confirm the importance of finding ways to continue feeding children who have lost access to school meals during the pandemic. One of the most significant policy responses to address food insecurity during the pandemic was the authorization of Pandemic EBT, which provided families whose children had lost access to free or reduced price school meals due to school closures with a debit card that could be used to purchase food, with benefits equivalent to the value of the lost school meals. Early research documented a strong beneficial impact on food security; the recently passed Continuing Resolution provides USDA with authority to extend the program, although implementation guidance has not been issued by the USDA at the time of this writing.³² The USDA also provided waivers that granted states flexibility in administering meal programs during school closures, intended to maximize their potential reach. The USDA recently extended many of these waivers. Pandemic EBT and other flexibility-granting school meal waivers are important tools in the arsenal available to policymakers to minimize the fallout from lost meals during the pandemic.

The beneficial effect of extended unemployment insurance is particularly relevant to Covid-19 response and recovery efforts. The CARES Act provided federally funded extensions to the standard state unemployment insurance benefits, and also made unemployment insurance available to many people who lost their jobs for pandemic-related reasons but who do not qualify for unemployment under normal state rules. Our findings suggest that these policies are particularly valuable strategies for countering food insecurity. Indeed, early research during the pandemic confirms a link between receipt of unemployment insurance and declines in food hardships.³³ However, these benefits are only available through the end of 2020, unless extended by new legislation.³⁴ Extending the potential duration of unemployment insurance and ensuring that it remains broadly available to those whose work has been

impacted by the pandemic are important ways that policymakers could better leverage the capacity of the program to strengthen food security.

Our work also highlights the potential food security benefits of policies that increase incomes among employed households, including the EITC and higher minimum wages. Low-wage workers are most likely to be considered essential workers during the pandemic, and to lack safer work-at-home options. At the same time, job opportunities remain tenuous and low-wage jobs continue to lack robust sick leave protections. Maximizing earnings for those able to work, both through adequate wages and EITC-like supplements, is another critical piece of the food security safety net.

Finally, our study confirmed that there are substantial inequities in food security across different types of households that precede the pandemic. These patterns are particularly striking in the current context, because the households already most at risk for food insecurity are the same kinds of households that are most vulnerable to economic and health impacts from the pandemic. Black and Hispanic households are disproportionately impacted by both job loss and Covid-19, thus enhancing existing disparities. Renters are particularly vulnerable during the pandemic as they risk eviction, especially now that many temporary eviction moratoriums have ended or will be ending soon; when resources are insufficient, many may prioritize rent over food. Some people with work disabilities may be exceptionally susceptible to Covid-19 complications, and single parents may face extra challenges in maintaining employment in the face of school closures. In short, pre-existing disparities in food insecurity risk are likely to be heightened in the Covid-19 context. Strategies such as minimizing barriers to SNAP, providing alternatives to school-based meals, extending unemployment insurance protections, and supplementing earnings among low-wage workers can play an important role in tackling these disparities. ■

Judith Bartfeld is Meta Schroeder Beckner Outreach Professor of Consumer Science at the University of Wisconsin–Madison and is an IRP Affiliate. Fei Men is a Postdoctoral Fellow in Nutritional Sciences at the University of Toronto.

Type of analysis: Generalized ordinal logistic regression

Data source: The Current Population Survey's Food Security Supplements

Type of data: Survey

Unit of analysis: Households

Sample definition: Households with minor children

Time frame: 2002 through 2014

Limitations: Only a limited subset of policy and economic influences on food security are considered; there are potentially many more. The inclusion of two-way fixed effects to capture unmeasured state and time variation helps to control for unmeasured differences across place and time, but does not rule out policy influences that are correlated with those included here. While broad controls for economic climate are included, not controlling thoroughly for state-specific economic trends that may influence policy choices may underestimate potential benefits. There may also be interactions among the included policy and economic variables, which the models make no attempt to capture.

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¹⁹Our models also include state and year fixed effects.

²⁰In our study, we report results separately for the three levels of food insecurity; marginal food security, low food security, and very low insecurity.

²¹The odds of food insecurity refers to the likelihood of food insecurity divided by the likelihood of food security; the odds ratios are comparisons of the odds under different economic or policy contexts.

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Discrimination and African American health inequities

Bridget Goosby, Jacob E. Cheadle, and Colter M. Mitchell

TAKEAWAYS

The brain processes interpersonal racism as social pain in the same regions associated with the emotional components of physical pain.

Exposure to perceived discrimination triggers a stress response; when this exposure is chronic, the stress response creates wear and tear on the body, increasing the risk of adverse health outcomes.

In part because of discrimination, African Americans are at increased risk of adverse health outcomes, including low birth weight, hypertension, obesity, and cardiovascular disease.

Health inequities begin even before birth and build over a lifetime.

This disproportionate risk of adverse health outcomes helps explain the disproportionate effect of Covid-19 on African Americans.



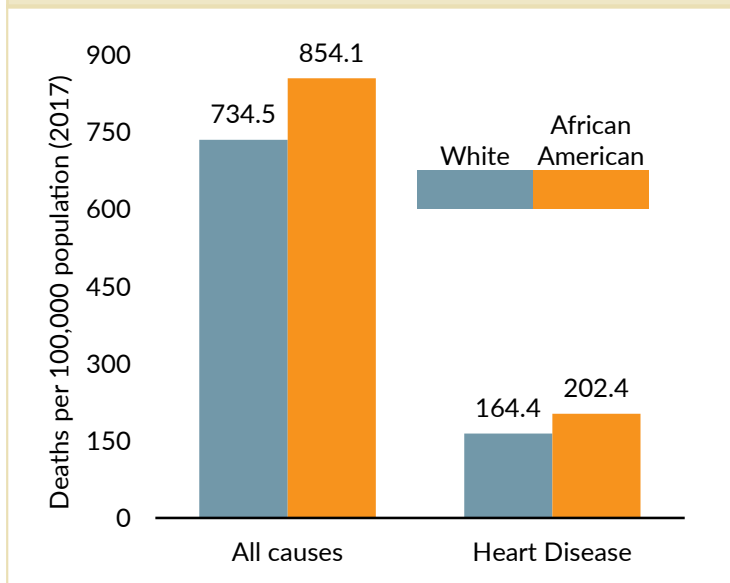
**Institute for
Research on
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irp.wisc.edu

In this article, we review research on stress-related biological mechanisms that link interpersonal discrimination to health patterns for African Americans.¹ There are longstanding and significant health inequities between African Americans and whites in the United States. African Americans are more likely to die at early ages (Figure 1). Recent data also suggest that Covid-19 has disproportionate effects on African Americans (see text box).² Although the processes through which these disparities operate are complex, they are rooted in America's historical legacy of racism. Evidence suggests that the social determinants of health—the circumstances in which people are born, grow up, live, work, and age—are as influential on health as access to health care and individual behaviors.³ Racism is one of the mechanisms through which social determinants affect health outcomes and inequities.

Figure 1. African Americans are more likely to die at early ages.



Source: 2018 Mortality data from the Centers for Disease Control and Prevention, National Center for Health Statistics, on CDC WONDER.

Our research questions include:

- What are the pathways by which health inequities emerge through interactions between the negative social experiences of interpersonal discrimination and stress biology?
- How do these interactions emerge?
- How do these interactions affect health at different periods of the life course?
- What are the policy and research implications of these interactions?

Defining interpersonal racism

Discrimination is the unjust or prejudicial treatment of a category of people. Race, while only one of many categories on which discrimination may be based, is an important dimension

along which groups of people experience systemic adverse treatment.⁴ This systematic adverse treatment with respect to race in general, and African Americans in particular, reflects racism—“categorizing and stratifying social groups into races in a way that devalues and disempowers certain groups.”⁵ Racism may be structural, reflecting the exclusion of particular groups from areas such as schools, employment, health, housing, credit, and justice.⁶ Racism may also occur at the individual level, through interpersonal discrimination—the topic of this article. Interpersonal discrimination and the social exclusion it creates is a persistent problem in the United States.⁷ In a 2017 national survey, 92 percent of African Americans reported that discrimination exists in the United States today, and 75 percent of those respondents believed that interpersonal discrimination is a significant social problem.⁸ While African Americans in the United States face a specific set of conditions that are important to consider, links between discrimination and health are not exclusive to African Americans. Many of the conclusions discussed here likely also apply to other marginalized groups who experience high rates of interpersonal discrimination and social exclusion.⁹

Discrimination and health

In this article, we consider some biosocial pathways—those that combine biology and social relationships—that link discrimination to health. In particular, we review research on neurobiology, stress physiology, and genomic factors.

The perception of interpersonal discrimination is associated with a range of mental and physical health outcomes (see text box).¹⁰ The pathways through which discrimination influences health reflect a complex set of interactions between human biology, the brain’s capacity for social interaction, and the extent to which an individual’s outcomes are affected by the actions of others. In order to process and prepare for social demands, our brains monitor, regulate, and coordinate internal systems. Discrimination, when identified by the brain as a stressor, triggers an immediate response.

In the short term, exposure to stress triggers an adaptive response that helps the body to prepare for and respond to danger, injury, or infection. However, if stress continues over the long term, the body’s capacity to process stress efficiently can decline, causing wear and tear on bodily systems that accumulates over time, and eventually causes physiological changes. These physiological changes, which increase the risk for adverse health effects, typically occur (and can be measured) well before any changes in health emerge. Measurement of these physiological changes thus provides a tool for understanding how social conditions and experiences affect health over a person’s lifetime, and at different life stages.

Disproportionate effects of Covid-19 on African Americans

The Centers for Disease Control and Prevention find that Covid-19 hospitalization and death rates are disproportionately high for African Americans compared to whites. For example, using incidence rates as a proportion of the population, August 2020 data showed that, compared to white, non-Hispanic individuals, African American non-Hispanic individuals had:

- 2.6 times higher rates of Covid-19 cases;
- 4.7 times higher rates of Covid-19 hospitalization; and
- 2.1 times higher rates of Covid-19 deaths.

Examples of adverse health outcomes associated with the perception of interpersonal discrimination

Mental health outcomes:

- Depression;
- Anxiety;
- Anger;
- Low self-esteem; and
- Negative well-being

Physical health outcomes:

- Poor self-rated health;
- Low birth weight;
- Hypertension;
- Obesity;
- High blood pressure; and
- Cardiovascular disease.

The role of social support and connection in human health has been well-documented.¹¹ Discrimination—whether intentional or not—that occurs as a result of interpersonal racism has the effect of excluding individuals from opportunities for attachment and support. People who are subject to racism and discrimination are denied the benefits of belonging and the positive emotional energy that results from successful social experiences.¹² Interpersonal discrimination contributes to health inequities on a population level by adding stress exposure to other types of social disadvantage—such as low socioeconomic status—that are also related to racism.¹³

To understand how interpersonal racism can affect health, it is important to begin not with the body, but with the brain. When an individual experiences interpersonal discrimination, the brain is the first to process it. Below we discuss some of the biosocial pathways connected to interpersonal discrimination; these pathways are also depicted in Figure 2.

To understand how interpersonal racism can affect health, it is important to begin not with the body, but with the brain.

Neurobiology

People often use similar terms to describe negative social experiences and physical pain. For example, a person who has been mistreated may say they “feel hurt” by the experience.¹⁴ There is truth in these expressions; the same neural structures support both the emotional component of physical pain and the experience of social pain that results from social rejection and exclusion.¹⁵ Social connection is an important component of human survival. The mechanisms that support protection from physical threats through physical pain may have evolved to respond to social inclusion threats as threats to survival.¹⁶

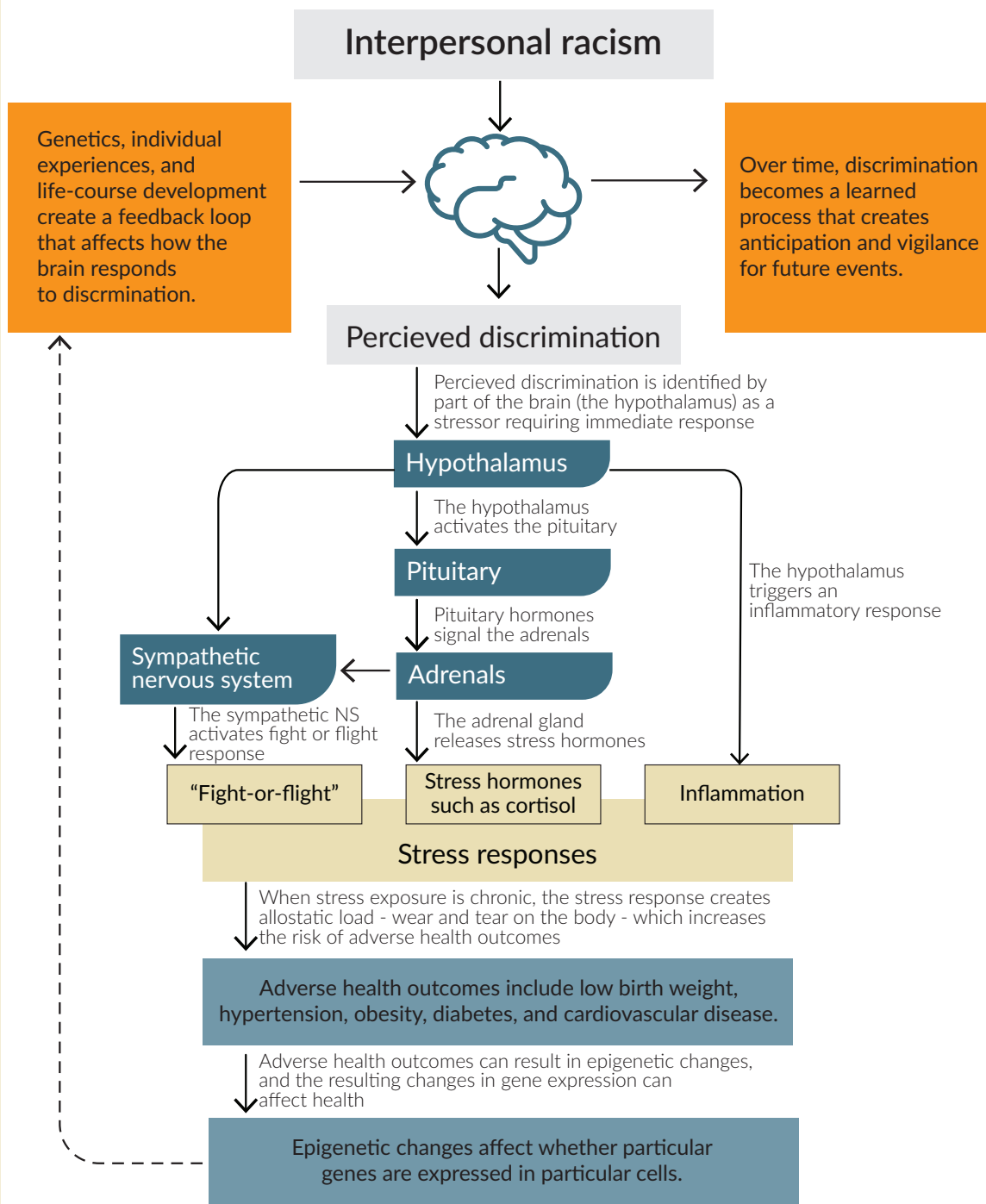
The interactions within and among these physiological systems allow the social environment to be processed and monitored, and prepare the brain and body for future social experiences and the anticipation of potential threats from those encounters.¹⁷ Thus, as shown at the top of Figure 2, while interpersonal discrimination triggers a stress response because of the immediate needs it presents, the threat of such experiences is also a learning process. These encounters shape how individuals understand their experiences, form expectations for future encounters, and consequently monitor and prepare the body for similar negative social interactions.

Neural processes monitor and recognize discrimination, the first phase in the stress-related physiological effects depicted in Figure 2. Several studies document the links between activity in the neural regions related to social exclusion and different aspects of the stress process. These regions monitor the environment for social feedback, including threats to social inclusion, and coordinate physiological responses.¹⁸

Stress physiology

Once the hypothalamus identifies a stressor, it activates the body’s stress response through physiological structures such as the sympathetic nervous system, pituitary, and adrenals. The sympathetic nervous system prepares the body to deal with the demands of the environment, including threats to social inclusion, and is responsible for the fight-or-flight response. Stressors trigger a sympathetic nervous system response, which in turn

Figure 2. Links between interpersonal discrimination and health operate through physiological responses and changes in gene expression.



Source: B. J. Goosby, J. E. Cheadle, and C. Mitchell, "Stress-Related Biosocial Mechanisms of Discrimination and African American Health Inequities," *Annual Review of Sociology*, 44 (2018), 319–340, Figure 1.

has effects on the cardiovascular system.¹⁹ The specific cardiovascular response depends on whether the stressor is positive (such as planning for an exciting but stressful event like a wedding) or negative (such as being stopped by the police). In response to a positive stressor, heart rate increases and blood vessels dilate, increasing cardiac output and keeping blood pressure relatively stable. However, when negative stressors are encountered, blood vessels contract, restricting blood flow for fast circulation

and increasing blood pressure.²⁰ High blood pressure (or hypertension, when chronic) is particularly dangerous in the presence of other stress-related conditions such as increased blood viscosity and increases in certain cholesterol particles that contribute to arterial scarring and increased cellular inflammation.²¹

Along with the sympathetic nervous system, the hypothalamic-pituitary-adrenal axis plays a key role in the body's response to stress and long-term health outcomes. As shown in Figure 2, this axis is responsible for the production of stress hormones that regulate metabolic function, immune response, and mood (such as cortisol) and the regulation of inflammatory immune function.²² Neural sensitivity to social exclusion and reactivity to negative social experiences, such as perceived interpersonal discrimination, are linked directly to activity in this axis, resulting in increased stress hormone production. While such increases help the body to respond to stress in the short term, chronic increases in cortisol production increase the risk for insulin resistance, obesity, and type 2 diabetes.²³ As with the sympathetic nervous system, increased activity in this axis also creates wear and tear on the arteries, increasing the risk of cardiovascular disease.²⁴ African Americans are at increased risk of all of these adverse health outcomes.²⁵

Gene expression depends on the environment and is sensitive to social experience.

Genomic factors

Genetic research, particularly as it relates to race, can be controversial. The fear that genetic research could be used to support racist agendas reflects a history of racism in our society.²⁶ In practice, considerably less genomic research has been done on African ancestry groups compared to European ancestry groups, despite evidence that more multiethnic research is needed.²⁷

This lack of information restricts our ability to understand how life in a racialized social system affects health through genetically influenced biological pathways. As shown in Figure 2, genetic variation contributes to variability in all the biological systems discussed above, and therefore influences the individual capacities underlying sensitivity to social exclusion, emotional and physiological reactivity, and individual differences in response to stress. Because the genome plays a key role in how the body responds to its environment, it is important to understand the relationship between genetics and biological processes. Genes may also provide information about systems for which the biological indicators are too invasive to measure, such as the systems that regulate communication within the neural networks that monitor and respond to social inclusion and exclusion.²⁸

It is useful to think in terms of genomics—the study of a person's genes, including interactions of genes with each other and with the person's environment—and not just genes alone. The gene is a predictor that can be linked to the environment, but other features of the genome also matter. As shown at the bottom of Figure 2, research indicates that social stress regulates gene expression, potentially affecting the stress response. For example, social stress is associated with an increase in pro-inflammatory immune response and a decrease in antiviral immune response.²⁹ The social stress of loneliness is also associated with changes in gene expressions.³⁰

Gene expression (which determines, for example, the production of insulin in order to signal blood glucose regulation) is also dependent on epigenetic processes, as indicated

by the dashed feedback arrow in Figure 2. Epigenetics is the study of the chromosomal alterations that affect whether particular genes are expressed in particular cells. Gene expression depends on the environment and is sensitive to social experience. For example, one study found that individuals who experience chronic social isolation have lower antiviral immune response gene activity compared to those who are socially connected, leaving them vulnerable to viral infections including the common cold.³¹ These individuals also showed increased expression of genes involved in inflammation, which underlies the progression of chronic diseases like metabolic syndrome, heart disease, certain cancers, and Alzheimer’s disease.

Interpersonal discrimination is associated with epigenetic changes, including in the placentas of newborns when mothers experienced discrimination during pregnancy.³² It is well documented that all these genomic processes—from epigenetics to gene expression—are highly developmental and change throughout the life course.³³

Effects over the life course

Over their lives, individuals move from birth (when birth outcomes shape health and developmental trajectories), to childhood (when social networks remain small, and dependency on parents remains high), through adolescence (when social networks expand, and youth become more independent), and into adulthood (with its many roles, demands, and dependencies). Below, we consider how individuals’ sensitivity to social rejection and exclusion varies over time, and how health deficits accumulate.³⁴ The social exclusion of interpersonal discrimination is a moment of learning that affects how future social interactions are experienced. It also contributes to a stress-response series that can have cumulative affects over time. This process is depicted in the feedback loop in Figure 2.

African Americans experience significantly worse birth outcomes compared to whites.

Disparities at birth

African Americans experience significantly worse birth outcomes compared to whites. Birth disparities have not improved significantly since the Jim Crow era, and the likelihood of low birth weight (a birth weight of less than 5.5 pounds) and preterm birth (born before 37 weeks of pregnancy are completed) for African Americans remain respectively 1.6 and 1.9 times larger than for whites, even after controlling for factors such as socioeconomic status.³⁵ African American women exposed to discrimination during pregnancy have elevated blood pressure, and their infants have lower birth weights and higher preterm delivery risks, outcomes strongly correlated with infant mortality.³⁶

The prenatal period is critical in shaping health risk trajectories. Exposure to stressful conditions influences the neural and physiological stress pathways of the fetus. Poor birth outcomes are associated with adverse health conditions in later life, including abdominal obesity, insulin resistance, hypertension, type 2 diabetes, and cardiovascular disease—all conditions for which African Americans are disproportionately at risk.³⁷ Prenatal changes in fetal stress pathways are the body’s way of preparing the infant for the environmental stressors that may be experienced outside the womb. In this way, the prenatal environment mirrors maternal stress-related factors, preparing the child for the mother’s social environment. For example, when women experience stress while pregnant, the fetus may be exposed to higher levels of stress hormones such as cortisol.³⁸ As noted above, over the long term, increases in cortisol production elevate the risk of negative health outcomes.

Disparities during childhood and adolescence

In many ways, African American children in the United States are not given the same opportunities to enjoy childhood that white children receive.³⁹ By the time they reach three or four years of age, young children of color are able to distinguish the members of dominant social groups and to perceive negative racial stereotypes.⁴⁰ This awareness may reflect African Americans' experiences of discrimination in the form of racial slurs and taunts, bullying and social exclusion, harassment by the police, and the disproportionate allocation of punitive treatments in school.⁴¹ As a consequence, African American children are at risk of experiencing elevated feelings of danger, social isolation, and psychological distress.⁴² Stress levels experienced due to factors such as residential segregation and other features of the United States' racial hierarchy may exceed some individuals' ability to cope and respond effectively.⁴³

Exposure to discrimination from birth through age 18 has been linked to a range of negative mental health outcomes.⁴⁴ Childhood stress is linked to higher blood pressure, blood glucose, body mass index, and pro-inflammatory immune function, thus elevating chronic disease risk as youth age and physiological wear and tear accumulates.⁴⁵ In children as young as 9 or 10 years old, exposure to discrimination is associated with elevated blood pressure, a greater degree of inflammation, and higher cortisol levels.⁴⁶

Adolescence is marked by a variety of connected physiologic and social transitions, including neural sensitivity to social exclusion.⁴⁷ As individuals experience biological changes during puberty, they become increasingly aware of their status in peer social hierarchies as peers rather than parents become the most important agents of socialization.⁴⁸ As they navigate the world more independently, they may also be increasingly exposed to discriminatory experiences, and thus become aware of institutional racism and other highly racialized systems of oppression.⁴⁹ Adolescents may also become increasingly aware of the discrimination and microaggressions experienced by themselves and others.⁵⁰ Such experiences may add to their existing stress burden, setting the stage for health inequities in later life.⁵¹

Studies examining differences in the production of the stress hormone cortisol between African Americans and whites from adolescence into adulthood suggest that African American adolescents produce more stress hormones at bedtime, and experience less of a decrease of those hormones during the day, indicating higher levels of stress activation.⁵² Adolescent reports of discrimination are also associated with higher levels of cortisol production in adulthood.⁵³

Disparities during adulthood

Adulthood is generally the time when illness manifests. Building on experiences in childhood and adolescence, stressors broaden and deepen with age, social roles become more complicated, and family and other interdependencies become more crucial.

Emerging adulthood—around ages 18 through 29—involves numerous transition points such as education, employment, parenthood, and marriage.⁵⁴ Exposure to interpersonal discrimination during these times of transition can exacerbate the stress levels typically experienced at these points.

Experimental laboratory studies have shown that exposure to discrimination for African American college students is linked to nervous system responses. Perceived discrimination among African American (but not white) college students is linked to lower heart rate variability, a cardiovascular risk factor.⁵⁵ Another study found that racial identity serves as a protective mediator in the association between blood pressure (an indicator of sympathetic nervous system activation) and racial discrimination. Racial discrimination

is associated with lower blood pressure for college students who have a strong and positive connection with the racial group they identify with. In contrast, racial discrimination is associated with higher blood pressure for students who do not feel a strong connection to their racial group.⁵⁶ These laboratory studies provide important clues regarding the physiological burdens borne by African American college students in predominantly white environments.

African Americans who become parents must consider their children's experiences with discrimination, including encounters in schools and with law enforcement.⁵⁷ Although the effect of such worries on parents' health has not been studied extensively, there is evidence that such conditions can lead to psychological stress.⁵⁸ For example, one study of college-educated adults found that African Americans' stress-response levels are 32 percent higher than those of comparable whites.⁵⁹ However, it is not clear how much of this disparity is due to the unique contributions of parenting stress, to the high probability of contact with whites for this group of relatively advantaged African Americans (and thus exposure to interpersonal discrimination), and to other factors such as structural or internalized racism and behaviors.

By middle age, African American adults show numerous signs of accelerated aging compared to white adults of the same age.

By middle age, African American adults show numerous signs of accelerated aging compared to white adults of the same age. For example, African American women between the ages of 49 and 55 are estimated to have a biological age—how old a person seems to be, taking into account health and lifestyle factors—that exceeds that of whites of comparable socioeconomic status by 7.5 years.⁶⁰ There is also recent evidence suggesting that African American adults aged 51 and older who reported very high lifetime exposures to discrimination had a higher biological age compared to those who reported low to moderate levels of lifetime discrimination.⁶¹ Discrimination among middle-age and older African Americans is also associated with other physiological indicators of chronic stress-related conditions such as diabetes, heart disease, and stroke.⁶²

African American adults have persistently higher stress-response levels relative to whites until they reach age 60–65, at which point such disparities appear to reduce in magnitude, perhaps due to earlier death among African Americans.⁶³ One study found that differences in diabetes- and cardiovascular-related mortality between African American and white adults were partially explained by differences in stress hormone levels, and that these differences were independent of socioeconomic status.⁶⁴ These findings are significant since African Americans are also more likely to experience earlier onset of age-related chronic diseases and fatal chronic conditions.⁶⁵ In fact, 28 percent of cardiovascular deaths among African Americans occur at less than 65 years of age compared to 13 percent for whites, a difference that persists after controlling for socioeconomic status.⁶⁶

When African Americans move up the socioeconomic ladder, that mobility may lead to race-related stressors. A recent study showed that African Americans who achieved a higher socioeconomic status reported higher rates of discrimination compared to those who remained at the same socioeconomic level. The same study found that these higher rates of discrimination explained the racial disparity in health outcomes among upwardly mobile adults.⁶⁷

African American health inequities contribute to the likelihood of experiencing the loss of multiple loved ones over the life course. This traumatic source of stress appears to exacerbate individual and intergenerational health risks among African American, but more study is needed to explore the long-term effects of this bereavement.⁶⁸

Sociological perspectives on stress and health

There is a tremendous need for continued collaboration between biological scientists and health inequality and discrimination researchers across a range of increasingly relevant fields, including molecular biology, immunology, and neuroscience. Sociological perspectives that emphasize the role of discrimination at multiple levels of social organization have much to offer because they recognize that discrimination reflects ongoing historical processes whose roots spread deep and wide within our culture. In the same way that sociologists are unfamiliar with the complexity of biological systems, biologists and health scientists tend not to consider the effects of social context. Just as the biological data have often been examined in white or European-ancestry samples, the vast majority of researchers in this area are white. We strongly encourage scholars of color to lend their experience, knowledge, and skills to this work, and we believe that broad and inclusive participation will help protect the future of biosocial science from the mistakes of the past.

As our country comes to terms with the effects of the pandemic, it is critical that we recognize the role of racism in shaping health inequities.

Interpersonal racism and Covid-19

Even before the Covid-19 pandemic began, African Americans were at disproportionate risk of adverse health conditions such as obesity, hypertension, high blood pressure, and cardiovascular disease. Many of these conditions appear to increase the risk of serious illness or death from Covid-19. In addition, African Americans may also be more likely than whites to be in a position to contract the virus because of inequities in access to health care, safe housing, and workplace protections. As our country comes to terms with the effects of the pandemic, it is critical that we recognize the role of racism in shaping health inequities. The mechanisms conducive to poor health are many, and broad patterns of racial inequity have long been embedded in the racist social organization of the United States. However, even if we focus instead on the smaller-scale interpersonal interactions through which discrimination occurs, differential treatment by way of exclusionary acts has large-scale consequences for population health.■

Bridget Goosby is Professor of Sociology at the University of Texas at Austin and an IRP Affiliate. Jacob E. Cheadle is Professor of Sociology at the University of Texas at Austin. Colter M. Mitchell is Assistant Research Professor at the University of Michigan Institute for Social Research.

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University of Wisconsin–Madison
3412 William H. Sewell Social Science Building
1180 Observatory Drive
Madison, WI 53706

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University of Wisconsin–Madison
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