

PRECARIOUS WORK SCHEDULES AND POPULATION HEALTH

KEY POINTS

- » Hourly workers in the US—especially those in the retail and food service sectors—have work schedules that are often unstable and unpredictable, with variable work hours, short advance notice of weekly schedules, and frequent last-minute changes to shift timing.
- » Exposure to unstable and unpredictable work schedules increases household economic insecurity and work-life conflict, leading to diminished sleep quality and increased psychological distress in adults.
- » Parental exposure to unstable and unpredictable work schedules is associated with child care complexity and informality and with behavioral problems in young children.
- » Six US cities and one state have passed laws to regulate unstable and unpredictable work scheduling practices, and several firms have announced changes to scheduling practices. More research is needed to assess the degree to which such changes in law and practice improve schedule stability and predictability and, consequently, worker and family health and well-being.

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Unstable and unpredictable work schedules are associated with poor health outcomes in adults, complexity and informality in child care arrangements, and behavioral problems in young children.

Work has become [more precarious in the US](#) over the past half-century, as employers have [transferred more of the risks](#) and uncertainties of doing business onto workers and households. As part of this shift, many workers have experienced an [erosion of job quality](#)—reductions in the real value of their wages, loss or reduction of fringe benefits such as retirement plans and health insurance, and an increase in job insecurity. Policy makers' responses to the rise in precarious employment have commonly focused on the [economic dimensions](#), exemplified by [appeals for a living wage](#).

Alongside changes in the economic dimension, the temporal dimension of work has undergone seismic shifts. [Unstable and unpredictable work schedules](#) have become the new normal for many workers, as the US economy has shifted from manufacturing to service sector jobs, and from steady Monday through Friday 9-to-5 work hours to a 24/7 economy, with schedules that are increasingly determined by workforce management algorithms. The result is that many workers experience [chronic uncertainty](#) about the days, times, and number of hours they will work each week and have [little or no input](#) into when and how much they will work. In addition, especially in [low-wage retail and food service jobs](#), workers are often scheduled for [far fewer than full-time hours](#).

Almost [60 percent](#) of the US labor force is paid by the hour. For these workers, fluctuations in hours automatically translate into volatility in earnings. However, precarious (that is, unstable and unpredictable) work schedules may also have more widespread effects on workers. [Previous research](#) has examined the effects of regular night, evening, or weekend work, but far less research has explored how irregular schedules affect workers and families. This brief focuses on [precarious work schedules](#) in the US, which put workers at risk of work-life conflict and role strain. These schedules are also likely to interfere with regular routines of self-

care, time with family, and the [maintenance of supportive social ties](#).

A full accounting of the toll of unstable and unpredictable schedules has been elusive because standard sources of data rarely measure these aspects of work, and those that do lack information on the health and well-being of workers. In this brief, we synthesize

reaching full-time status in some weeks but falling to thirty hours in others. The NLSY data also reveal that workers in the retail and food service sectors are at particularly high risk for schedule instability. This insight aligns with the results of previous qualitative studies that highlighted [pervasive instability in schedules in the service sector](#), which employs 17 percent of US workers.

To obtain detailed information on service sector workers' schedules, we launched [the Shift Project](#) in 2016. This project included a survey with a national sample of 30,000 such workers. [We found](#) that two-thirds of survey respondents received less than two weeks' notice of their work schedule, and 70 percent experienced last-minute changes to the timing of their shifts (exhibit 1). One-quarter were expected to work on-call shifts, and half worked back-to-back closing and opening (or "clopening") shifts. For 80 percent of these workers, the employer primarily decided when and how much they would work. Almost seventy percent of workers reported having to keep their schedules open and available for work. One-third were working part-time but desired more hours.

[Schedule instability disproportionately](#) affects low-income and female workers (who are overrepresented in the service sector) and people of color ([who have more unstable and unpredictable](#) schedules than their counterparts do). Therefore, the consequences to health and well-being of unstable and unpredictable schedules may contribute to health disparities by race, class, and sex.

“Unstable and unpredictable work schedules have become the new normal for many workers.”

research findings that allowed us to connect the dots between precarious work schedules and health, and we identify the gaps that remain to be filled.

■ Prevalence Of Precarious Work Schedules

Until recently, the only indicator of schedule stability in a national sample came from the Current Population Survey question about “usual” weekly hours, which some respondents answered by reporting that their hours varied too much for them to say. However, this measure [vastly underestimates](#) volatility in weekly hours. Such data gaps have led researchers to develop improved questions on hours volatility and schedule instability that have since been added to the [National Longitudinal Survey of Youth \(NLSY\)](#) and the [General Social Survey](#).

The NLSY began collecting information on the prevalence of unpredictable and unstable schedules in 2011. Drawing on this resource, Susan [Lambert and colleagues](#) reported in 2014 that 54 percent of hourly workers received less than two weeks' advance notice of their work schedule, and 41 percent received less than one week's notice. Three-quarters of hourly workers experienced routine ups and downs in the number of hours they worked. The average worker saw hours change by ten hours from week to week,

■ Why Would Precarious Schedules Affect Health?

Precarious work schedules may ultimately degrade population health because they undermine economic stability and introduce a pervasive “arrhythmia” into daily life that unsettles routines and relationships that foster health. For [hourly workers](#), hours volatility leads nearly mechanically to earnings volatility, whereas bills come due with relentless regularity. Although [involuntary part-time work](#) poses a serious financial challenge for many hourly workers, [dramatic](#)

fluctuations in hours mean that some of the same workers face intermittent overwork as well. Uncertainty about schedules can also make it difficult to take on a second job to make ends meet or to pur-

work requirements, and economic volatility could affect workers' ability to afford health care.

A number of noneconomic pathways that stem from unstable schedules may also compromise worker health and well-being. People with unstable schedules may experience added stress because work schedules conflict with the needs and routines of home life, such as family meals or school drop-offs and pickups. In turn, stress can affect routines and healthy behaviors. Schedule uncertainty could also be a barrier to developing and maintaining supportive relationships with friends and family members, because the uncertainty of work schedules impedes making plans.

Although there are reasons to expect a relationship between schedules and health, empirical work on this question has been limited by a lack of data. However, we can marshal evidence from employer case studies, deep dives into existing data sources, and a new trove of information on schedules and health from the Shift Project.

“Precarious work schedules... put workers at risk of work-life conflict and role strain.”

sue education or training that could lead to upward mobility. Finally, irregularity in work hours can fuel economic insecurity by jeopardizing eligibility for means-tested benefits or child care subsidies that depend on work hours.

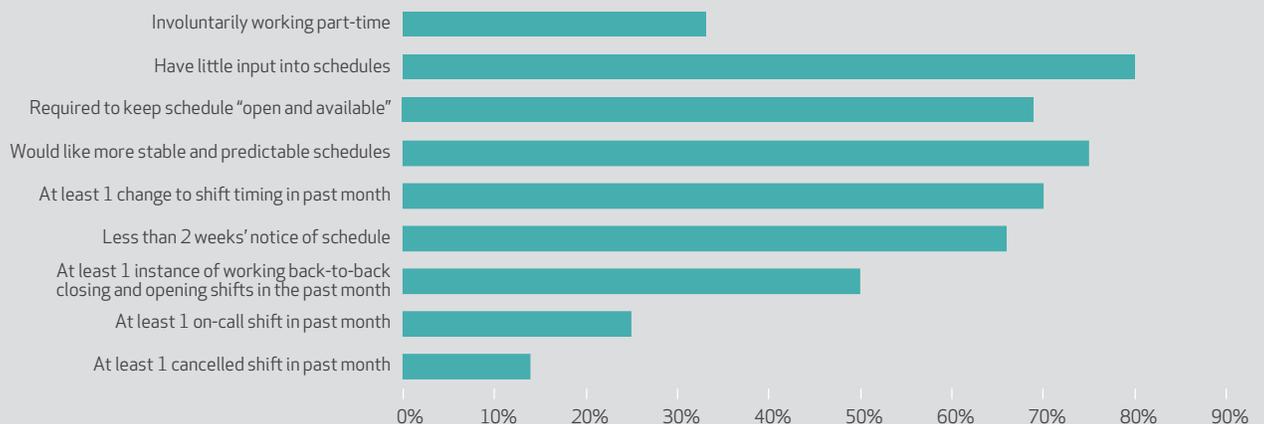
Our Shift Project work shows that unstable and unpredictable work schedules are associated with intrayear income volatility and that such schedules ultimately increase the risk of experiencing material hardships such as housing instability or hunger. These hardships could degrade health through a number of pathways. For instance, an inability to make ends meet can lead to stress, depression, and anxiety, which may in turn interfere with healthy sleep patterns. Volatile work hours could also put Medicaid eligibility in jeopardy in states that impose Medicaid

Evidence On Work Schedules And Health

In reviewing the evidence, we focused on health outcomes that we expected to be most directly tied

EXHIBIT 1

Schedule unpredictability and instability in retail/food service



SOURCE Schneider D, Harknett K. It's about time: how work schedule instability matters for workers, families, and racial inequality [Internet]. Berkeley (CA): Shift Project; c 2019 [cited 2020 Jan 31]. Available from: <https://shift.berkeley.edu/its-about-time-how-work-schedule-instability-matters-for-workers-families-and-racial-inequality/>

to work schedules, including behaviors such as sleep, diet, and exercise, as well as mental health outcomes such as psychological distress, stress, and anxiety. Each of these outcomes may be directly influenced by precarious work schedules and may be mutually reinforcing. For instance, precarious schedules may lead to distress that interferes with sleep, which in turn exacerbates distress. Although precarious work schedules may also exact a toll on physical health, these effects are likely to take longer to manifest themselves and may be more difficult to uncover in research.

The research we review below came primarily from observational studies, with the recent randomized controlled study of the Gap being one noteworthy exception.

“Two-thirds [of service sector workers] received less than two weeks’ notice of their work schedule.”

One study of the impact of irregular work on health-related behaviors [documented an association](#) between irregular schedules and smoking, lack of exercise, and obesity. However, of all health-related behaviors, sleep is the one most commonly tied to irregular schedules. Shift work often involves [acute sleep loss](#) in connection with night and early morning shifts, and [20–30 percent of shift workers](#) suffer from insomnia or other sleep problems. The schedule unpredictability engendered by on-call shifts is also related to sleep problems—in particular, [difficulty falling asleep and staying asleep](#). Rotating shifts and closely spaced shifts also appear to [negatively affect the length of sleep](#).

A [randomized controlled study](#) at the Gap clothing stores found that a stable scheduling intervention improved sleep by 6–8 percent on average. These results also align with our findings that retail and food service workers exposed to precarious schedules,

including short advance notice and on-call shifts, [were much more likely](#) to report poor sleep quality than those who are not exposed. Because [sleep quality](#) has [pervasive influences](#) on health, unstable work schedules are likely to negatively affect mental and physical health through this sleep pathway.

Schedule unpredictability and instability are also associated with worse mental health outcomes. We found that workers with the least stable schedules were more than twice as likely as those with the most stable schedules to [report psychological distress](#). The [Gap study](#) provides experimental evidence of positive effects from offering more stable and predictable schedules on the stress levels of workers who juggle two jobs. These new findings are consistent with those of earlier research that documented relationships between schedules and mental health and found that uncertain and irregular work schedules were associated with stress, [depression](#), and [anxiety](#). These mental health consequences are important not only in their own right, but also because stress, anxiety, and distress [lead to worse physical health outcomes](#).

■ Intergenerational Consequences

One-third of workers in the service sector are parents with dependent children, and one in ten children have a parent working in the service sector (authors’ calculations from the 2016–17 [American Community Survey](#)). Research and theory suggest that parental exposure to unstable and unpredictable work schedules could have negative consequences for child development and health.

One pathway by which parents’ schedules might affect children is by making it difficult to secure stable, high-quality child care. Parents’ irregular and non-standard work schedules are a [barrier to accessing high-quality, formal child care arrangements](#), because such providers are often available only on weekdays and require that families commit to predictable and regular attendance. Formal child care providers face cost and other [barriers to expanding care options](#) to accommodate the needs of parents with irregular work schedules. As a result, qualitative studies have

shown that parents working low-wage jobs with unstable and unpredictable work schedules often [scramble](#) to arrange a [patchwork of informal child care](#) arrangements. We examined this association using Shift Project survey data and found that parents' unstable and unpredictable work schedules led to [more complex and informal child care arrangements](#).

“Workers with the least stable schedules were more than twice as likely as those with the most stable schedules to report psychological distress.”

Household economic insecurity and parents' mental health and stress are also pathways by which unstable work schedules could affect child development and behavior. [Variable maternal schedules](#) are associated with more problem behavior and lower social competence for infants, and [week-to-week fluctuations](#) in the hours that mothers work are also associated with child behavior problems. Specifically, parental exposure to on-call shifts, cancelled shifts, and last-minute changes in shift timing is associated with [increases in children's externalizing and internalizing behavior](#). However, using data from the Fragile Families and Child Wellbeing Study, Rachel [Dunifon and colleagues](#) found no association between maternal work at “different times each week” and children's aggressive or anxious behavior.

Research also suggests that parental work schedules can have other implications for children's health. [Studies of the 1990s welfare reform legislation](#), which pushed mothers into the labor force en masse, found that the low-wage jobs these mothers entered constrained their [ability to obtain recommended health care](#) for their children.

Much of this research has focused on mothers' work-

ing conditions. An important direction for future research is to consider the association between fathers' working conditions and child outcomes.

■ Policy Solutions And Research Opportunities

Recent heightened awareness of the widespread consequences of chronically unstable schedules has spurred [employer-initiated changes](#). [The Gap](#) began to offer employees two weeks' notice of their schedules and eliminated on-call shifts, and [Walmart](#) announced plans to offer more stable schedules. Companies such as [Costco](#) have a long-standing practice of offering more stable and predictable work schedules compared with the industry standard.

Policy makers have also taken notice. Over the past five years, [cities and states have passed laws](#) to regulate work schedules, with provisions such as requiring two weeks' advance notice of schedules and extra pay for last-minute schedule changes and on-call work. San Francisco led the way with the “[Retail Workers' Bill of Rights](#),” which took effect in 2015. [Seattle](#) and [Emeryville](#), California, passed similar laws that went into effect in 2017. In the past two years, [New York City](#), [Oregon](#), [Philadelphia](#), and [Chicago](#) have each passed fair work week laws designed to provide workers with more predictability in their schedules—and more pay when they are not given the required notice. At the federal level, Rep. Rosa DeLauro (D-CT) and Sen. Elizabeth Warren (D-MA) reintroduced the [Schedules That Work Act](#) in October 2019 to regulate schedules for workers nationally.

The introduction of local scheduling laws offers the opportunity to assess the legislation's impacts on schedule instability and eventually on health outcomes using quasi-experimental, difference-in-differences research designs. These changes to the law present a valuable opportunity for generating more convincing causal estimates of the effects of unpredictable and unstable work schedules on the health and well-being of workers and their families. Such estimates are valuable, as nearly all of the research to date has been associational. Early evidence from Se-

attle suggests that a secure schedule ordinance has led to significant [increases in schedule predictability](#). A longer-term report will include health and well-being outcomes. In Emeryville, Anna Gassman-Pines

“Week-to-week fluctuations in the hours...mothers work are...associated with child behavior problems.”

and colleagues’ [forthcoming quasi-experimental evaluation](#) of a secure schedule ordinance will assess impacts on mood and sleep.

■ Looking Ahead

While recent studies have found that unstable and unpredictable schedules are negatively associated with adult sleep and stress, access to child care arrangements, and child behavior, additional research on the connection between precarious schedules and other indicators of adult and child health and well-being is needed. For example, research should look beyond

the retail and food service sectors to industries such as health care, transportation, and warehousing. Other questions that require more study are which population subgroups are hardest hit by schedule instability, which dimensions of precarious schedules are most consequential, and which health outcomes are most responsive to precarious schedule conditions.

Finally, while this brief has focused on the US, schedule precarity is also a feature of labor markets globally. In Europe, the European Commission’s recent [Directive on Transparent and Predictable Working Conditions](#) takes up the issue directly. A broader global perspective on work schedules and population health would afford opportunities to study [the effects of such regulations](#) and identify social policies or other contextual conditions that may mitigate or exacerbate the ill effects of precarious schedules.

The temporal dimension of work and its consequences for population health have begun to receive research and policy attention. This growing awareness and activity could create a valuable synergy in which localized experiments offer research opportunities that continue to enhance awareness that time matters when it comes to health and well-being.

HealthAffairs

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