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DISCUSSION PAPER SERIES

IZA DP No. 18004

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ABSTRACT

Childcare as Infrastructure: The Impact of COVID-19 on Childcare and Gender Equity*

Conducting a nationally representative survey of 2,500 working parents between Mother's and Father's Day of 2020, we examine gender differences in the childcare shock during the COVID-19 pandemic. Drawing on demographic, household, and labor market factors, we document gender differences in time use, work status, mental health, job satisfaction, and employer benefits. Using variation in pre-pandemic characteristics to measure exposure to the childcare shock, we find mothers in the more vulnerable group were 15 percentage points more likely to experience a reduction in hours due to childcare than similarly situated fathers. Although paid family leave helped narrow the gap in hours between mothers and fathers in the affected group, newer COVID-19 workplace practices such as working from home and childcare subsidies had no effect.

JEL Classification: D13, D91, I30, J220, J280, J71

Keywords: childcare, gender differences, household decision-making, paid leave, COVID-19

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1. Introduction

The onset of the COVID-19 pandemic resulted in an unprecedented disruption to caregiving as daycares and schools were closed, exposing the critical link between childcare and the labor market. For many working parents this unexpected childcare shock meant finding back-up childcare, re-arranging responsibilities within the household, or cutting back on work. While optimists speculated that this unexpected disruption to the status quo might usher in a new era of gender equity with respect to caregiving, others cautioned that the childcare burden would fall disproportionately on mothers, possibly undoing the historic gender parity in labor market outcomes achieved just prior to the pandemic (Gould, 2020).

Yet measuring the differential impact of the pandemic on mothers has been challenging due to the endogeneity of women being more likely to experience adverse labor market conditions related to COVID-19 stemming from their greater exposure to in-person jobs in the education, healthcare, and service sectors. Prior studies have documented that the unexpected childcare responsibilities arising from school and daycare closures were disproportionately shouldered by women, finding that mothers with school aged children experienced higher rates of job loss and hours reductions (Zamarro and Prados, 2021), especially in states with early school closures had a higher disparity of women with worse labor outcomes (Heggeness, 2020). Yet the simultaneous disruption to both the childcare labor markets makes it unclear whether the disproportionate impact on women's labor market outcomes was caused by the lack of childcare or whether women shouldered more of the childcare responsibilities in response to having already lost their job or reduced their hours.

This paper examines the impact of the COVID-19 pandemic on the labor market outcomes and well-being of working parents, measuring the degree to which there were differential impacts on mothers versus fathers. We explore how working parents responded to the initial childcare shock in 2020, whether their work status changed as a result and why, as well as what individual and employer resources may have ameliorated any adverse impacts on their work hours and employment status. We also examine other measures of well-being to determine if the childcare shock had a differential impact by gender on indicators of mental health and job satisfaction beyond work status.

We add to the growing literature on how the COVID-19 childcare shock affected working parents, and women in particular. First, we collected a unique data set that captured

lived experiences in real-time through a nationally representative survey of roughly 2,500 of working parents between Mother's Day (May 10) and Father's Day (June 21) of 2020. The survey covered a rich set of topics, including individual demographic and household characteristics, parental time use before and during the pandemic, pre-existing employer benefit policies and new COVID work-place practices, and changes to individual physical and mental well-being. More importantly, we also asked about any changes in work status during the pandemic for the individual and their spouse as well as the reasons for such changes, including whether the reason was due to a lack of childcare. Thus, unlike other studies that assume women with children who lost their jobs or reduced their hours during COVID did so because of the childcare shock, we have a direct measure of whether childcare was a factor in affective an individual's labor market status.

Second, we further address the endogeneity between childcare and labor market outcomes during the pandemic by exploiting the variation in pre-existing observable characteristics causing some parents to be more exposed to the sudden closure of schools and daycares. Specifically, we compare labor market outcomes for an "affected" group of parents with working spouses and single parents who had at least one child under the age of 10 to a comparison group of parents with a non-working spouse or other adult living in the household and/or older children. We then compare the experiences of mothers versus fathers in the affected group relative to the comparison group to estimate the differential impact of the childcare shock on female labor outcomes.

Third, we provide a more complete picture of how the sudden loss of childcare differentially affected mothers in the affected group. This includes measuring impacts on other dimensions of well-being beyond labor market impacts such as mental health and job satisfaction. We also document the use of both formal sources of support such as employer policies and practices as well as informal sources of support such as back-up childcare and whether these interventions were successful in reducing any differential impacts on mothers in the affected group.

Although we find evidence of adverse impacts on mothers with high exposure to the COVID-19 childcare shock, our results offer more nuanced insights than prior studies. First, although mothers in the affected group experienced more adverse labor market outcomes, this result was primarily driven by the intensive margin (e.g., reductions in hours worked), with little or no detectable impact on the extensive margin (e.g., job loss). Second, we find that simply having employer benefits such as paid family and medical leave *available* prior to the pandemic

did little to alleviate the differential labor market penalty for mothers, although it was beneficial for the few mothers opting to take up their family leave benefits during the pandemic. Other COVID-19 workplace practices, such as childcare subsidies and the ability to work from home, also had little to no impact on differentially improving labor market outcomes for mothers in the affected group, likely because these perks were highly correlated with other pre-existing protective factors such as higher incomes and greater workplace flexibility. In terms of well-being, women who were more exposed to the childcare shock were significantly more likely to report being dissatisfied with their jobs, but did not experience significantly worse well-being in terms of high psychological distress, job insecurity, or sleep quality compared to mothers with less exposure to the COVID childcare shock.

Our results have important implications for the ongoing policy debates about how best to provide affordable high-quality childcare in the wake of the COVID-19 pandemic. First, our ability to better measure the impact of the childcare shock on working parents' labor market outcomes reveals that the initial effects were perhaps less severe than what was suggested by news headlines or prior studies. This suggests that while childcare is an essential piece of infrastructure that helps parents get to work just like bridges and roads do, the magnitude of the problem is not so great as to make potential public or private solutions infeasible. Second, documenting the range and frequency of both formal and informal supports used by working parents illustrates the multi-faceted nature of childcare and work arrangements such that "one-size-fits-all" policies or practices will likely be less effective or efficient than more tailored approaches. Finally, the low take-up rates associated with paid family leave and other workplace benefits, during an unprecedented period of childcare disruption, suggests that there are still significant barriers to accessing formal supports, (e.g., stigma, financial costs, opportunity costs), even for well-established pre-existing policies that have often been touted as the "gold standard" for addressing the ongoing childcare crisis in the U.S.

2. Background

The COVID-19 pandemic was dubbed a "She-Cession" because of the disproportionate toll on female workers in terms of reduced hours and jobs lost. One potential explanation for this phenomenon is that women were more likely to be responsible for childcare within the household such that the sudden closure of schools and daycares placed a greater burden on the ability of mothers to participate in the labor market. An alternative explanation is that women were more

likely to hold in-person jobs in highly affected industries such as education, healthcare, and services where the pandemic necessitated that businesses operate under limited schedules or close entirely, resulting in fewer hours, temporary layoffs, or unemployment for workers. We seek to disentangle these two explanations to estimate how much of the she-cession can be attributed solely to the lack of childcare, providing better insights into the magnitude of the problem and potential solutions.

Several studies have explored how the pandemic, as well as what policies and practices were implemented in response, impacted time use within the household. Elsner et al. (2024) examined time use within the household in 27 countries from the EU using panel data from the Living, Working and COVID-19 (LWC) survey from April 2020 through May 2022. They found no gender differences in how school closures reduced hours worked or increased hours spend on household chores and leisure. Schüller (2025) compared longitudinal data from the "Growing up in Germany" panel study between 2019 and 2023, finding that households experienced a decrease in the maternal share of housework when fathers began working from home during the pandemic. Pabilonia and Vernon (2023) use the American Time Use Survey (ATUS) and find that when both parents worked from home during the pandemic, mothers and fathers maintained their paid hours despite spending more time on childcare, often sharing child supervision time, although mothers combined paid work and child supervision to a greater extent than fathers.

Recent studies have also explored how much of the gender difference in the division of childcare contributed to the observed labor market disparities between mothers and fathers during the pandemic. For example, Heggeness (2020) used data from the Current Population Survey (CPS) to compare the changes in labor market outcomes for mothers and fathers, before versus after the pandemic, in areas with early stay-at-home orders or school closures to areas with delayed or no such orders. She found that women were more likely to have a job but not be "at work" in early closure states versus non-early closure states. In contrast, there was no such disparity for men at work between the early and non-early closure states. However, states with stay-at-home orders and school closures also placed greater restrictions on businesses in the education, healthcare, and services sectors where women were disproportionately affected by layoffs and reduced hours. Thus, it remains unclear whether women in the early closure states were not at work because they lost their childcare or they lost their job or both.

Other researchers have tried to disentangle the endogeneity of childcare and labor market

outcomes by comparing working parents who are more versus less likely to be impacted by school and daycare closures. Couch, Fairlie, and Xu (2022) used the CPS to compare changes in labor market outcomes for women with young versus school age children during the pandemic, finding that women with school aged children suffered worse outcomes than those with younger children. Similarly, Fang et al. (2024) use data from the Canadian Labor Force Survey to study changes in labor market outcomes during the COVID-19 pandemic and find that workers who were lower skilled, female, and had younger children experienced lower employment, wages, and hours worked during the initial wave of the pandemic, but the effect faded over time. Again, from this design it is hard to distinguish between the loss of childcare and the measured adverse labor outcomes.

More similar to our study, Zamarro and Prados (2021) collected data on the experiences of parents with school aged children through their "Understanding Coronavirus in America" survey that was conducted between March 10th and July 22nd of 2020. They found that women with school aged children reported more time spent on the childcare responsibilities, higher rates of job loss and hours reduced, and greater psychological distress compared to women without school aged children but no such reported differences among men. However, prior research shows that women with school-aged children tend to work in less "greedy" jobs that demand fewer hours and have more predictable schedules (e.g., administrative staff)—jobs that may have been more exposed to the COVID downturn (Goldin, 2021). Thus, it again remains unclear whether the loss of childcare led to worse labor market outcomes or vice versa.

This paper uses a novel dataset that directly measures whether adverse labor outcomes during the pandemic were due to childcare and compares these outcomes for working parents with varying levels of exposure to the COVID-19 childcare shock. We view the disruption caused by the COVID-19 pandemic as a natural experiment to study how sudden shocks to caregiving affect working parents and what policies and practices might ameliorate these impacts. In doing so, we aim to answer the following research questions:

- How did working parents respond to the childcare shock during the initial onset of the pandemic in terms of household time use, labor market participation, and measures of well-being? How did the burden of work and caregiving vary among women by race, income, and education level during the pandemic?
- To what extent did working mothers versus fathers experience a change in work status

(e.g. hours or employment) during the pandemic? How often was the lack of childcare cited as a reason for these changes in work status among women versus men? Did this response vary for households with greater exposure to the childcare shock?

- To what degree did informal sources of support (e.g., back-up childcare), formal employer policies (e.g., paid leave), and new COVID-19 workplace practices (e.g. work from home) help alleviate the differential impacts of childcare on changes in work status for mothers? Which groups of working parents are able to access these supports?

3. Survey Design, Data Collection, and Validation

Our data consists of a nationally representative survey that we conducted with Pure Spectrum between Mother's Day (May 10th) and Father's day (June 21st) of 2020. Our target population was roughly 2,500 working parents, defined as individuals who were working and had a child under 18 living in their household at the time of the survey. The sample was drawn from an aggregated panel of survey takers from the Pure Spectrum platform that were stratified by gender, race, ethnicity, education, marital status, household income, Census region, and age of the youngest child to match the characteristics of working parents from the Current Population Survey. Respondents were compensated anywhere from $5 for initial respondents to a maximum of $10 for hard-to-reach respondents and were also entered into a entered into a raffle to win one of ten $250 Amazon gift cards. In addition to covering the basic demographics, the survey also asked a comprehensive set of questions related to informal and formal childcare arrangements, time use before and during the pandemic, changes in work status and why, availability and use of workplace pre-existing benefits, adoption of new COVID-19 workplace practices, employer organizational characteristics, and established measures of physical and mental health status.[1]

Our survey yielded a robust sample of 2,443 working parents who were largely representative of the population of working parents nationally. Table 1 provides the basic demographic and household characteristics. As one might expect, roughly 80 percent of our sample is between the ages of 18 and 45 years with a slight over-representation among mothers. About 75 percent of the sample is white, and 18 percent identify as Hispanic. The sample is nearly evenly split between those with a four-year college degree or higher versus those without.

[1] The survey questionnaire used established scaled questions where possible (e.g., K-6 psychological distress scale from Kessler et. al (2002), Job Satisfaction Scale from Anderson, Coffey, and Byerly (2002).as well as new questions developed in response to the pandemic. See the Supplementary Materials for the full survey instrument.

About two-third of the sample is married, about half have a child under the age of 5, on average they have 1.7 children under 18 living in their household, and about one-quarter have another adult (e.g., relative, grandparent) living with them. About 45 percent of our sample lives in a household where the income is $75,000 or less.

Table 2 documents that the lived experiences of our respondents appear to be a fairly good representation of what most Americans were experiencing during the early onset of the COVID-19 pandemic. For example, over 70 percent of respondents experienced a stay-at-home order or a school closure, while only one third had back-up childcare, with the most popular option being a grandparent. Before the pandemic, over 77 percent of respondents were full-time employees and another 9 percent were self-employed, with 23 percent holding in-person essential jobs and only 4 percent working from home prior to the COVID-19 disruption. During the pandemic, over 40 percent experienced a reduction in work hours and 35 percent were furloughed, unemployed, or had their contract terminated. About 85 percent of respondents had a spouse who worked prior to the pandemic and of these, 19 percent reported that they and their spouse earned roughly the same amount.

Comparing the demographic characteristics of our sample of working parents to those of working parents from the Current Population survey, we find that our survey respondents were fairly similar to a working parents nationally.[2] Table 3 shows that the two surveys show no statistically significant differences for most age, racial, education and household income categories. Our national COVID Survey respondents were over-represented in some younger age categories, having a status of married or single status, having some college education (although no degree). The similarities between the two surveys is even stronger in terms of employment status. There is only a 3 percentage point difference in the Underemployed and Unemployed categories, which most likely can be attributed to slight differences in the definition of the underemployed and the limited CPS availability of data pertaining to furloughs and/or gig work. However, none of these differences are statistically significant.

4. Methods

[2] See the Supplementary Materials for a more detailed comparison between our National COVID Survey and the Current Population Survey for both weighted and un-weighted samples of the May/June 2019 and 2020 surveys for both the total and parent samples. Note that CPS coverage of more vulnerable populations (e.g., younger, low-income, marginalized racial groups) dipped during the pandemic (Ward and Edwards, 2021).

To better understand how the lack of childcare impacted labor market outcomes during the pandemic we identified an "affected" group of parents that had pre-existing characteristics that would make them more vulnerable to the COVID-19 childcare shock. We then compare the experiences of women versus men across groups with greater versus lesser exposure to the childcare shock to estimate the impact on both labor market outcomes and other measures of well-being. Finally, we also assess the effectiveness of established employer policies and new COVID-19 workplace practices on ameliorating the differences in labor market outcomes between these two groups.

4.1 Creating the "affected" group

Even though our sample of working parents is nationally representative in terms of observable characteristics, those who choose to answer our survey could differ from those who did not in terms of unobservable characteristics such as their capacity to spare 30 minutes during an unprecedented worldwide emergency while also caring for their families who were largely at home. Thus, we can only make within-sample comparisons between mothers and fathers who answered our survey. However, working parents varied greatly in terms of their level of need for childcare as well as the sources of both informal and formal supports available to them. To be able to make apples-to-apples comparisons of similarly situated moms and dads, we created a pseudo-treatment group to look at working parents who were more vulnerable to disruptions in the supply of childcare (the "affected" group), which we could then compare to a group of less vulnerable individuals. The rationale here is that school or daycare closures due to the pandemic would have greater impacts on the labor market activity of respondents in affected households due to their greater need to accommodate the loss of childcare. We created this group based on two pre-existing criteria:

1) Prior to the pandemic, the respondent had a child under the age of 10 who likely would not be left home alone even for short periods of time and would be less able to play or do remote learning largely unsupervised, possibly needing more immediate and constant care if they were unable to attend school or daycare (Zamarro and Prados, 2021).
2) Prior to the pandemic, the respondent lived in a household where informal childcare support was constrained due to having a working, or no, spouse in the household, possibly needing to reduce their hours or modality (e.g., wok-from-home versus in-person). This is similar to the empirical strategy employed by Heggeness (2020).

Applying these criteria, we find that 58 percent of the sample (N=1,424) had pre-existing characteristics that indicated greater exposure to the childcare shock during the pandemic.

4.2 Empirical analysis

For comparison to prior studies, we initially estimate a differences-in-differences model for the differential impact of simply having a child under the age of 10 and being female, on any adverse labor outcome, using the following OLS specification shown in Equation (1):

$$Outcome_i = \beta_0 Female_i + \beta_1 ChildUnder10_i + \beta_2 Female_i * ChildUnder10_i + X_i + \epsilon_i \quad (1)$$

Here, the dependent variable is a binary indicator for a particular outcome (e.g., takes a value of 1 if individual *i* experienced a job loss or reduced their hours during the pandemic). $Female_i$ is a binary indicator that takes a value of 1 if respondent i is female. $ChildUnder10_i$ is a binary indicator that takes a value of 1 if respondent i has a child under the age of 10 living in their household. We also include a vector of demographic and labor market controls, X_i including indicators for age, race, ethnicity, marital status, educational attainment, household income, work status before the pandemic, whether the respondent lived in a state with a stay-at-home order or experienced a school closure, and whether they had backup childcare available. The coefficient of interest is β_2 which captures the impact of being female and having a child under the age of 10 in the household on the outcome of interest. The outcomes we study include (1) any reduction in hours or job loss, (2) any reduction in hours or job loss reportedly due to childcare, and (3) any changes in well-being (e.g., sleep quality, psychological distress, concerns about the future, and job satisfaction). To address concerns about the endogeneity associated with simultaneously determining work and childcare arrangements, we introduce our affected group using the following specification as described in Equation (2):

$$Outcome_i = \beta_0 Female_i + \beta_1 Affected_i + \beta_2 Female_i * Affected_i + X_i + \epsilon_i \quad (2)$$

Here, $Affected_i$ is a binary indicator that takes a value of 1 if respondent *i* is in the affected group. This replaces the $ChildUnder10_i$ variable to serve as a more precise measure for the individual's exposure to the COVID-19 childcare shock. Finally, we analyze whether employer policies or work practices were able to alleviate any adverse impact on labor market outcomes. To

do this, we estimate a difference-in-difference-in-differences model for each policy, using the following specification described in Equation (3):

$$\begin{aligned} Outcome_i = {} & \theta_0 Female_i + \theta_1 Affected_i + \theta_2 PolicyOffered_i + \theta_3 Female_i * Affected_i \\ & + \theta_4 Female_i * PolicyOffered_i + \theta_5 Affected_i * PolicyOffered_i \\ & + \theta_6 Female_i * Affected_i * PolicyOffered_i + X_i + \epsilon_i \end{aligned} \tag{3}$$

Here, $PolicyOffered_i$ is a binary indicator for whether the policy was offered by the respondent's employer and θ_6 is the coefficient of interest. We study the impacts of two different pre-existing employer policies (paid family leave and paid medical leave) as well as two new pandemic-era workplace practices (childcare subsidies and the ability to work from home). We also study the impacts of whether respondents make use of paid family leave since that is a rapidly expanding policy tool at the state level.

5. Results

5.1 How Did Working Parents Respond to the Initial COVID-19 Childcare Shock?

Before conducting our regression analysis, we first explore the initial gender differences in household time use, labor market participation, and measures of well-being. We also document how the burden of work and caregiving varied among women by race, income, and education level during the pandemic. This allows us to determine whether our sample of working parents had experiences that were similar to those reported nationally. For example, the recession induced by COVID-19 was characterized as a "she-cession" because women more likely to experience job loss than men, mostly from being laid off or furloughed from their jobs during the pandemic. Figure 1 shows that this was also true for our sample of working parents where 27 percent of mothers lost their job during the pandemic, compared to 23 percent of fathers, similar to national trends based on data collected by the CPS during May/June of 2020.

This gap is likely due to both differences in the types of jobs held by mothers versus fathers as well as differences in caregiving responsibilities. For example, mothers were significantly more likely than fathers (42 percent of versus 30 percent in our sample) to have held an in-person job prior to the pandemic. In addition, Figure 2 shows that during May/June of 2020, when many

daycares, schools, and businesses were closed or operating under limited schedules, both mothers and fathers in our sample increased the time they spent on household tasks. However, mothers significantly increased time spent per week on schoolwork, playing with children, and cooking and cleaning. In contrast, fathers only marginally increased time spent on cooking and cleaning. Other surveys have found similar gender differences in time use during the pandemic (Schüller, 2025).

Thus, simply comparing the experiences of mothers versus fathers cannot tell the extent to which the gender differences in adverse labor market outcomes during the pandemic were due to pre-existing differences in types of jobs held versus the sudden disruption of childcare. To better measure the impact of childcare on the labor market outcomes of mothers versus fathers, we specifically asked our sample of working parents: "If you answered yes to a change in work status, what was the reason for the change (please check multiple answers if they apply)?" Among choices, respondents could indicate "I needed to care for my children due to school/daycare closures."[3] Figure 3 shows that conditional on having any kind of adverse labor market outcome during the pandemic (e.g., job loss or hours reduced), mothers were 4.2 percentage points more likely than fathers to say it was due to childcare. On the extensive margin, 22.4 percent of mothers versus 16.7 percent of fathers reported that they experienced some kind of job loss (e.g., furloughed, gig work cut, contract terminated, became unemployed, or no longer working) due to the lack of childcare. These gender differences were even greater among parents who became unemployed during the pandemic with 25.8 percent of mothers versus 14.1 percent fathers reporting that childcare played a role.

On the intensive margin, Figure 4 shows that among working parents who reduced their hours during the pandemic, mothers were more likely than fathers to reduce their hours, but especially if they were not able to work from home. Among those who did not work from home, 18.6 percent of mothers versus 12.1 percent of fathers reported that it was due to childcare. Separately, among working parents who reduced their hours, the number of hours lost was virtually identical across mothers and fathers. In general, working parents lost 15.2 hours, or nearly 2 days per week, on average due to lack of childcare. This was similar in magnitude to the loss of hours due to other reasons such as staff reductions, loss of business, or lack of remote work available.

[3] The other choices included: (1) My company reduced hours/staff; (2) I cannot perform my job remotely, (3) My company that I own has lost business, (4) My company that I own has gone bankrupt, (5) I am an essential worker, (6) Other (write in).

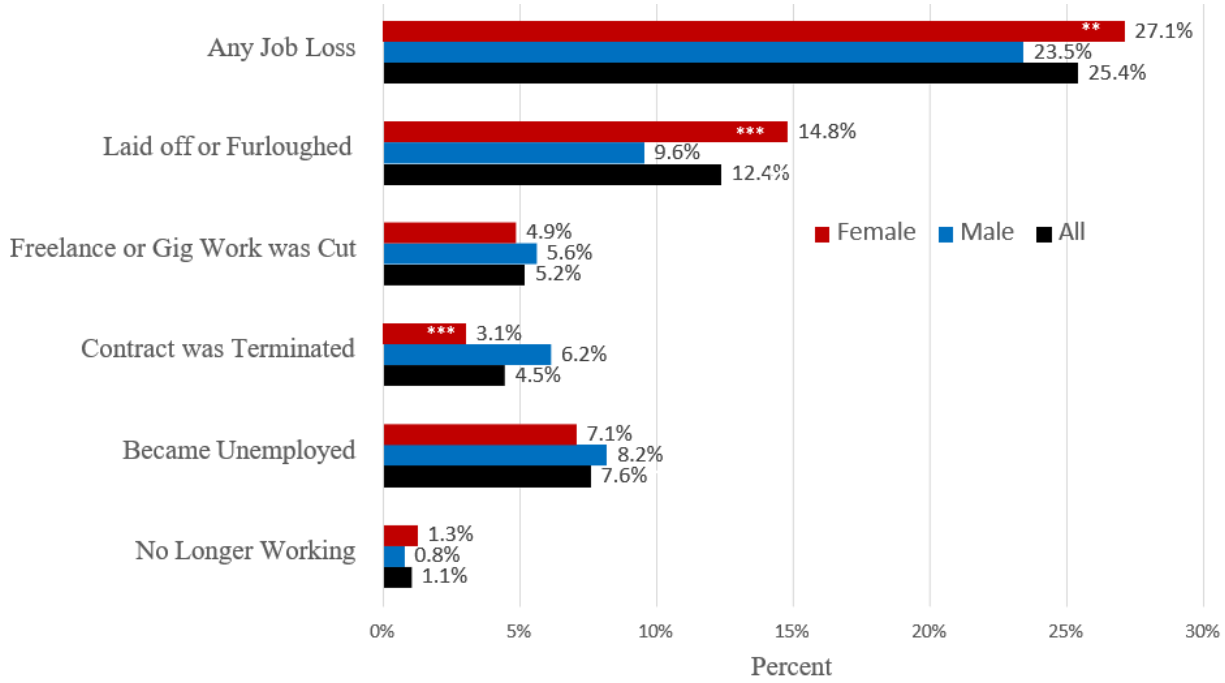

Fig. 1. Incidence of Job Loss during the COVID-19 Pandemic, by Gender. Significance levels: *p < 0.10, **p < 0.05, ***p < 0.01 comparing means for women versus men. *Source:* Authors' calculations based on data collected from a national panel through Pure Spectrum between Mother's Day (May 10, 2020) and Father's Day (June 21, 2020).

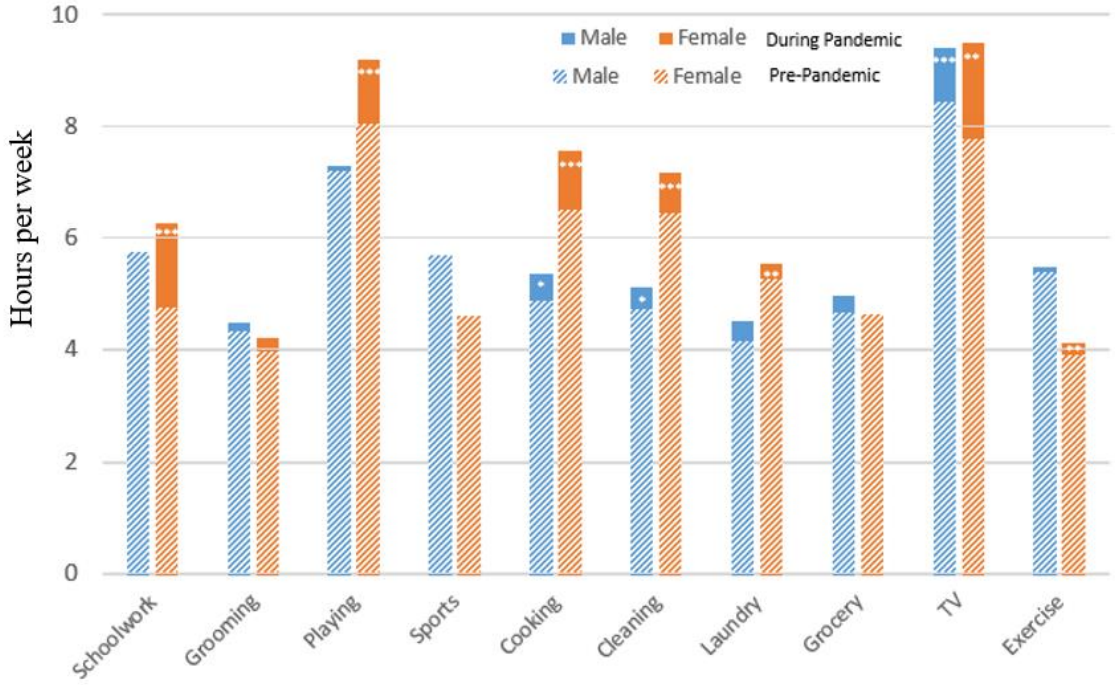

Fig. 2. Hours Spent on Household Tasks during the Pandemic, by Gender. Significance levels: *p < 0.10, **p < 0.05, ***p < 0.01 for comparing means pre- versus during the pandemic. *Source:* Authors' calculations based on data collected from a national panel through Pure Spectrum between Mother's Day (May 10, 2020) and Father's Day (June 21, 2020).

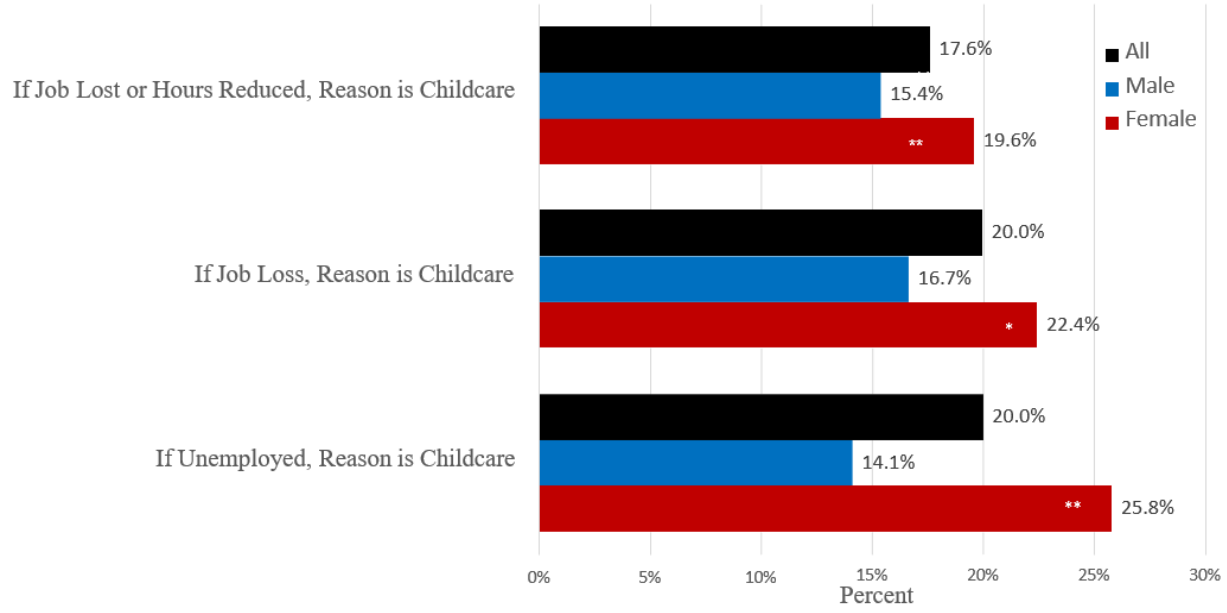

Fig. 3. Incidence of Adverse Labor Market Change due to Childcare, by Gender. Significance levels: *p < 0.10, **p < 0.05, ***p < 0.01 for comparing means for women versus men. *Source:* Authors' calculations based on data collected from a national panel through Pure Spectrum between Mother's Day (May 10, 2020) and Father's Day (June 21, 2020).

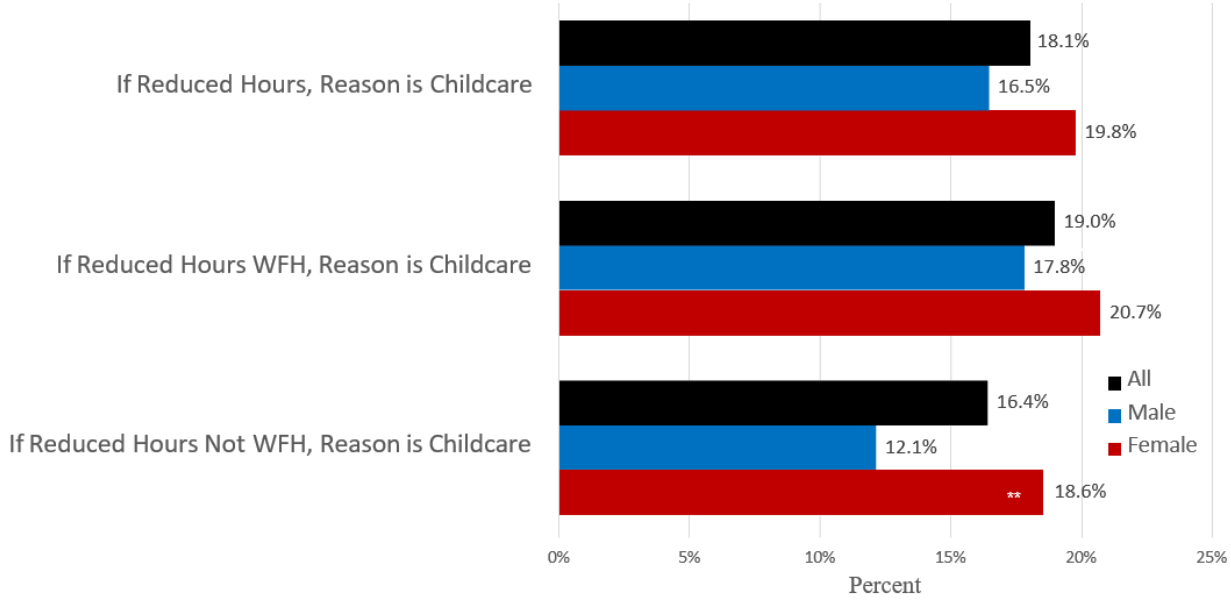

Fig. 4. Incidence of Hours Reduced due to Childcare Conditional on Adverse Labor Market Change, by Gender. Significance levels: *p < 0.10, **p < 0.05, ***p < 0.01 for comparing means for women versus men. *Source:* Authors' calculations based on data collected from a national panel through Pure Spectrum between Mother's Day (May 10, 2020) and Father's Day (June 21, 2020).

We also explore heterogeneity in the degree to which adverse labor market outcomes were associated with childcare across our affected group of mothers and fathers. We would expect that parents living in households with pre-existing conditions with greater exposure to the childcare shock would experience more adverse labor market outcomes specifically due to childcare compared to those living in households that were less exposed. Figure 5 confirms that while both mothers and fathers in the affected group were more likely to suffer some kind of adverse labor market outcome due to childcare relative to their counterparts in the unaffected group, this difference was only statistically significant among women. Mothers in the affected group were more than twice as likely to lose a job and nearly three times as likely to reduce their hours because of childcare than mothers who were not in the affected group. In contrast, there were no statistically significant differences between fathers in the affected or not affected groups.

Within our group of working mothers, moms with fewer resources, greater needs, or less flexibility experienced greater impacts. Table 4 shows that mothers who were Black, Hispanic, low-income or without a college degree, or had a child under the age of five were significantly more likely to experience either job loss or reduction in hours. However, conditional on experiencing any adverse labor market outcome, mothers living in low-income households, caring for a child under the age of five, or working an in-person job were significantly more likely to report lack of childcare as the reason. These observed differences among groups of mothers impacted by childcare disruptions could reflect differences in their ability to access childcare support. Figure 6 shows that 38.3 percent of higher income households had used some form of back-up childcare during the pandemic compared to only 26.8 percent of lower-income households, with higher-income parents more likely to make use of a nanny, former daycare provider, or a friend compared to lower-income parents who were more likely to rely on grandparents as caregivers.

We also document who had access to and made use of formal childcare supports, finding large discrepancies. Panel A of Figure 7 shows 24.0 percent of respondents were offered paid family leave, but only 4.2 percent took it up, similar to the rate observed before the pandemic (Stepler, 2017), despite the expansion of paid family leave under the CARES Act. Moreover, men consistently used more leave of any kind, a departure from usage patterns prior to the pandemic (see Panel A of Figure 7). In addition, men were more likely to be offered additional COVID workplace supports during the pandemic—such as back-up childcare subsidies, unlimited unpaid time off, and paid time off to quarantine while symptomatic or ill (see Panel B of Figure 7).

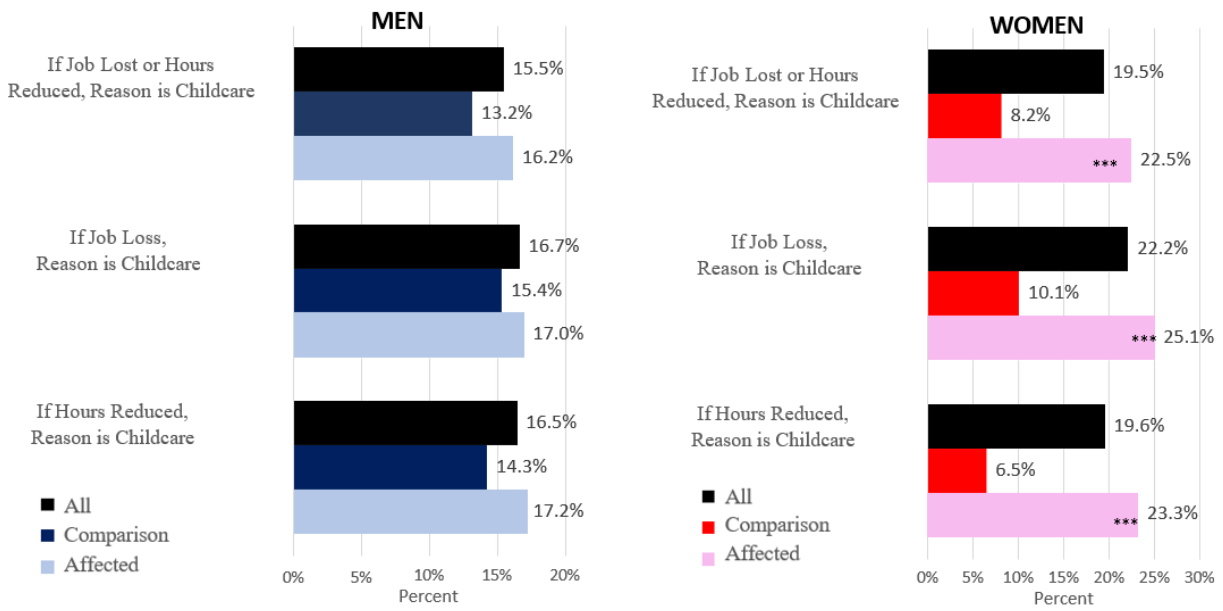

Fig. 5. Incidence of Job Loss and Hours Reductions due to Childcare, Conditional on Adverse Labor Market Change. Significance levels: *p < 0.10, **p < 0.05, ***p < 0.01 for comparing means for affected versus the comparison groups. *Source:* Authors' calculations based on data collected from a national panel through Pure Spectrum between Mother's Day (May 10, 2020) and Father's Day (June 21, 2020).

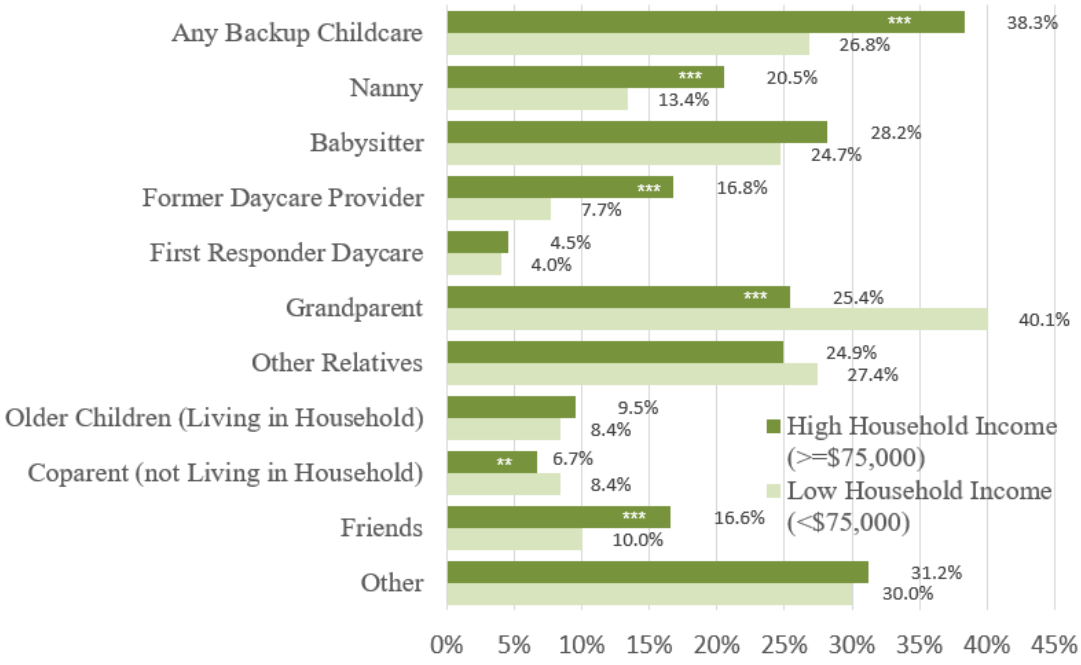

Fig. 6. Informal Childcare Supports used during the Pandemic, by Household Income. Significance levels: *p < 0.10, **p < 0.05, ***p < 0.01 for comparing means for low versus high income groups. *Source:* Authors' calculations based on data collected from a national panel through Pure Spectrum between Mother's Day (May 10, 2020) and Father's Day (June 21, 2020).

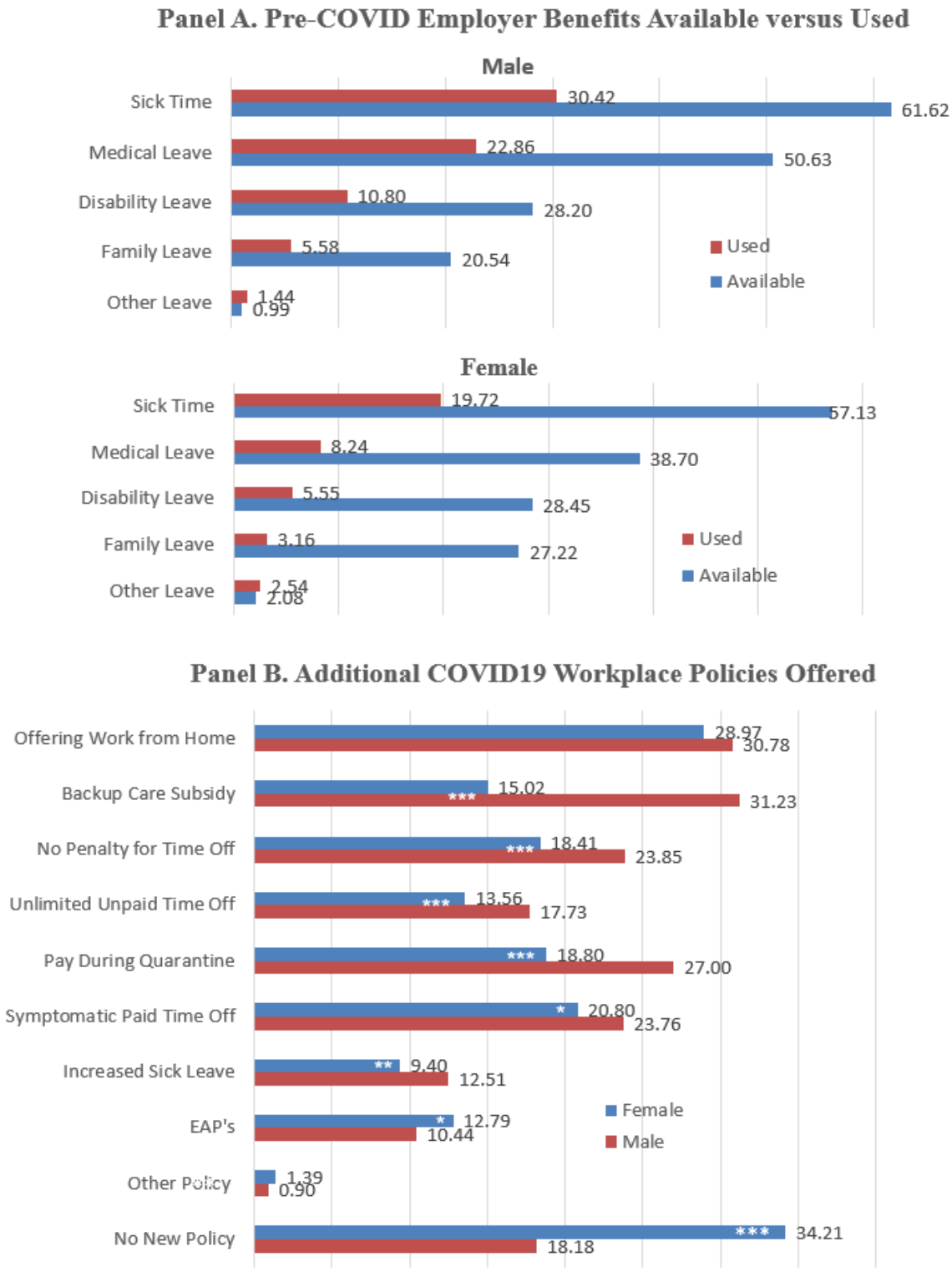

Fig. 7. Formal Childcare Supports Offered and Used during the Pandemic, by Gender. Significance levels: *p < 0.10, **p < 0.05, ***p < 0.01. *Source:* Authors' calculations based on data collected from a national panel through Pure Spectrum between Mother's Day (May 10, 2020) and Father's Day (June 21, 2020).

Lastly, we compared several measures of well-being for mothers and fathers. Figure 8 confirms that all parents experienced high psychological distress, but mothers fared better in terms of parental stress and resiliency than men. However, women worried more about job loss and reduced hours, expressed greater uncertainty about when things would "return to normal," and slept less well than men—all of which likely contributed to their lower job satisfaction.

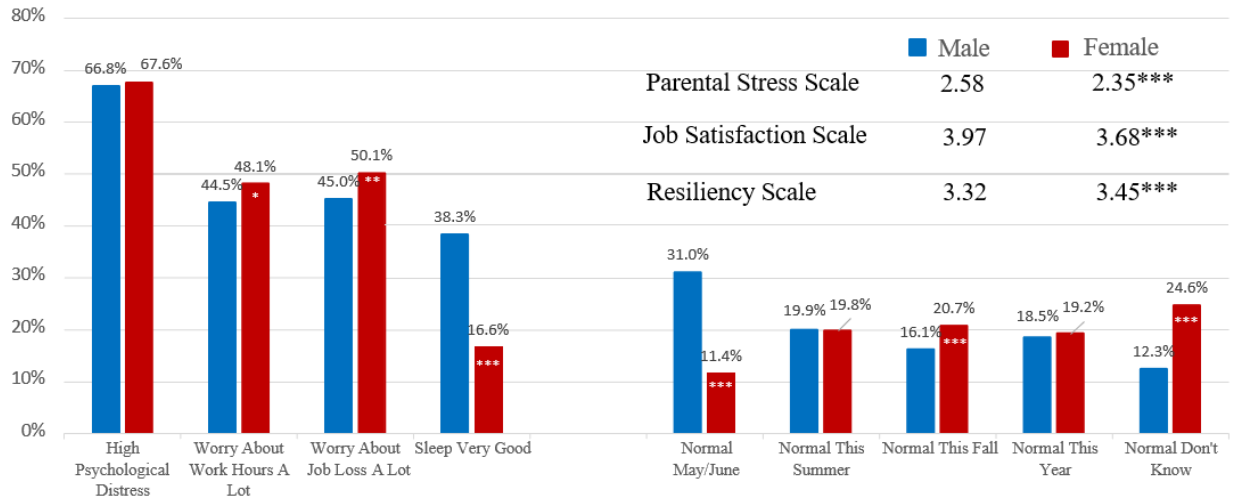

Fig. 8. Measures of Individual Well-Being during the Pandemic, by Gender. Significance levels: *p < 0.10, **p < 0.05, ***p < 0.01. *Source:* Authors' calculations based on data collected from a national panel through Pure Spectrum between Mother's Day (May 10, 2020) and Father's Day (June 21, 2020).

Overall, during the pandemic women experienced greater increases in time spent on children and household tasks than men and reported worse labor market outcomes due to childcare, especially those with pre-existing characteristics that made them more exposed to the COVID-19 childcare shock. Some of these differences can be attributed to women with younger children, lower household incomes, as well as fewer formal and informal childcare supports. Surprisingly, more formal pre-existing employer benefits, such as paid leave, were infrequently used by working parents and new COVID-19 workplace practices, such as back-up childcare, were less available to women. Controlling for this rich set of individual, household, and workplace practices, we next measure the differential impact of the childcare shock on mothers and explore whether employer policies and/or COVID-19 workplace practices can alleviate this disparity.

5.2 Impact of the COVID-19 Childcare Disruption on Labor Market Outcomes

For comparison purposes, we first estimate the impact of the COVID-19 childcare shock on women's adverse labor outcomes during the pandemic using the types of proxies that prior studies have relied upon, while testing our two methodological improvements. First, we test how using

the affected group provides a more refined measure of exposure during the pandemic compared to using school-aged children as a proxy for the primary independent variable of interest. Second, we test whether parents' self-reported assessments of whether the lack of childcare was a factor in their observed labor market outcome to provide a more accurate measure of the dependent variable rather than assuming all job loss or reduced hours were due to lack of childcare.

Table 5 estimates the differential impact of childcare on labor market outcomes by gender using Equations 1 and 2 which vary both the independent and dependent variables of interest. The basic differences-in-differences estimate with no controls in column 1 shows that having a child under the age of 10 was associated with a 10.4 percentage point increase in adverse labor market outcomes for working parents during the first few months after schools and daycares closed, with mothers being 7.7 percentage points more likely to suffer either job loss or reduced hours than men. However, once we control for demographic characteristics and other factors affecting household decision-making regarding work and childcare that were not available to other researchers (e.g., back-up childcare, work status prior to the pandemic, job type), the magnitude of the gender difference is no longer statistically significant (column 2).[4] This suggests that a sufficient share of mothers with children under the age of 10 had other, previously unobservable, dimensions of flexibility that affected their ability to accommodate the COVID-19 childcare shock without significantly affecting their labor market outcomes on either the extensive (e.g., staying employed) or intensive (e.g., maintaining their hours) margins. This is similar to Heggeness (2020) who finds that while there was no immediate impact on detachment or unemployment, mothers with jobs in early closure states were significantly more likely than mothers in late closure states to have a job but not be working as a result of early shutdowns. Thus, simply using the presence of children under the age of 10 as a proxy for measuring childcare constraints is not entirely sufficient to capture the differential impacts of the COVID-19 childcare shock on the labor market outcomes of mothers versus fathers.

To better account for these constraints, columns (3) and (4) use our affected group of parents who reported pre-existing characteristics that would be more likely to constrain their ability to maintain their labor market participation when schools and daycares closed. Recall that parents in our affected group had at least one child under the age of 10 years but also lacked the

[4] See Table A.2 in the Supplementary Materials for a full set of results that sequentially adds in each control to see how each of these previously unmeasured factors affect the estimates.

flexibility of a non-working spouse or partner living in the household who could immediately help with caregiving responsibilities during the initial months of the COVID-19 childcare shock. We find that our affected group of working parents suffer adverse labor market outcomes similar in magnitude to those with children under the age of 10. However, mothers in the affected group were 6.9 percentage points more likely to suffer job loss or reduced hours during the onset of the pandemic, even when we control for those other, previously unobservable, margins of adjustment.

Next, in columns (5) and (6) we introduce our novel dependent variable: self-reported job loss and/or hours reduced *due to childcare*. Restricting the sample, to working parents who suffered any adverse labor market outcome, we find that the coefficient on the interaction between female and children under 10 is twice as large as before, and is significant at the one percent level, even when controlling for demographic characteristics, stay at home and school closure orders, and work-life flexibility. Using this more precise measure, we find that women were 15 percentage points more likely to have lost a job or reduced hours due to childcare, even when using the imprecise proxy of having a child under the age of 10. This is comparable to the findings of Zamarro and Prados (2021) who show that parents who reported being the sole caregiver for their children were 20 percentage points more likely to reduce their working hours and a 5 percentage points more likely to transition out of employment.

Finally, in columns (7) through (10) we combine both our improved independent and dependent variables to estimate a more precise impact of the COVID-19 childcare shock on the differential labor market outcomes of mothers versus fathers. Colum n (8) shows that women were 11.9 percentage points more likely to experience any adverse labor market impacts due to childcare compared to fathers in the affected group. Column (9) shows that little of the impact on labor market outcomes is due to the extensive margin (job loss). On the intensive margin (column 10), we find that mothers in the affected group were 14.6 percentage points more likely to reduce their hours because of childcare compared to men in the affected group.

5.3 Estimating the Impact of the COVID-19 Childcare Shock on Well-being

So far, we have documented that the loss of childcare during the pandemic had a significantly negative impact on the labor market outcomes of mothers relative to fathers who were living in households that were more constrained in terms of their ability to adapt to school and daycare closures at the onset of the pandemic. But given the widespread nature of the COVID-19 childcare, it's likely that working parents might have also suffered some disutility by choosing to

trade off more leisure time (e.g., sleep) to avoid reducing their hours of work. Or even without giving up any leisure time, working parents might experience other disruptions to well-being such as higher psychological distress and/or lower job satisfaction from suddenly trying to juggle work and family responsibilities during a truly "unprecedented" period of time.

Table 6 estimates the relative impact of the CVOID-19 childcare shock on women in the affected group for three measures of well-being: job satisfaction, psychological distress, and sleep. Despite all working parents experiencing worsening well-being on these three measures, only job satisfaction showed a differential impact on mothers in the affected group. In terms of sleep, working mothers in general sleep worse than working fathers, and affected parents worse than those in the comparison group, but there was no differential impact for mothers versus fathers in the affected group. In terms of psychological distress, affected parents were more likely to report symptoms that would be diagnosed as clinically "high" levels, but again, mothers in the affected group were no more likely to be experiencing high psychological distress compared to fathers. Interestingly, where the rubber seemed to meet the road for moms with little intra-household childcare flexibility during the pandemic was in terms of job satisfaction. Mothers in the affected group were 22 percentage points less likely to be happy in their jobs compared to fathers. This suggests that women perhaps felt somewhere between a rock and a hard place where they needed to reduce their work hours to spend more time on childcare and perhaps forego the more satisfying aspects of their jobs. Alternatively, they may not have felt as supported by their employers as fathers given that they were less likely to have access to employer benefits or workplace practices during this unprecedented time of disruption to both work and childcare.

5.4 Assessing the Efficacy of Employer Benefits and COVID-19 Workplace Practices

Finally, we assess whether traditional employer benefit policies or new COVID-19 workplace practice were able to ameliorate the adverse labor market outcomes on working parents during the pandemic. Table 7 shows the results from Equation (3) which estimates the coefficient on the triple interaction between female, affected group, and each relevant policy that was offered to the individual. In terms of traditional employer policies, moms in the affected group still experience a 13.8 percentage point reduction in the number of hours worked with no significant effect on the triple interaction term, whether or not we include our battery of controls (see columns 3 and 4). This is perhaps not surprising given that few parents actually used paid family leave during the pandemic, even though the CARES Act had put a national paid leave

program in place through December 2021. However, for working mothers in the affected group who *did* chose to take paid family leave, this policy was effectively at reducing the numbers of hours lost due to childcare (see Columns 3 and 4 of Table 8). While the decision to take paid leave is likely correlated with other factors that could help mothers in the affected group maintain their hours, such as managerial or co-worker support, autonomy over their work schedules, or the ability to work from home , this finding is nonetheless encouraging that traditional workplace policies offer some potential role for ameliorating gender differences in labor market outcomes due to childcare.

The remaining columns in Table 7 test the effectiveness of the new COVID-19 workplace practices offered to working parents, focusing on work from home and childcare subsidies. Neither of these new workplace practices helped to narrow the gap in hours reduced between mothers and fathers, perhaps because women bore more of the childcare burden even when they worked from home and this burden was substantial when children were not in school or at daycare. Being offered a childcare subsidy from your employer had a negative but insignificant impact on narrowing the gap between affected mothers and fathers in terms of hours reduced due to childcare. This could be due to the difficulty in taking up this benefit during May and June of 2020 when many schools were still closed, daycares had re-opened under limited capacity, and few summer camps were running. In general, we hesitate to draw conclusions about the effectiveness of these pandemic-era workplace practices due to the limited ability of working parents to actually make use of them. It could very well be the case that the option to work from home is more useful in alleviating time spent on dropping off and picking up children from school or daycare. Similarly childcare subsidies would be much more useful when daycares are running at full capacity and accepting new children.

6. Conclusion and Discussion

Back in January 2020, just prior to the pandemic, there was an interesting milestone in the jobs report from the Labor Department. Ninety-five percent of the net jobs added in December went to women such that women held just over half of all payroll jobs in America, for only the second time in history (Gould, 2020). Economists were predicting that women would continue to outnumber men in the workforce, particularly since the share of women with a college degree had surpassed that of men for the first time in 2019. Little did we know that women's employment prospects would plummet just two months later. One reason women suffered greater job losses is that the industries hardest hit by the pandemic — leisure, hospitality, education and even some

parts of health care — were disproportionately female. These jobs were largely in-person so there was no chance for remote work. Moreover, many in-person job did not immediately recover when states reopened because of capacity restrictions, business failures, or even lack of demand from consumers who were cautious about both in-person interactions and over-spending.

However, another reason cited often in headlines, op-eds, and social media posts was the lack of childcare. The closure of schools and daycares for weeks and months during pandemic revealed that childcare is an important piece of infrastructure. It enables parents to "get to work" just like roads and bridges do for commuters – maybe even more so since many people can effectively work from home, but not with a toddler running around. Even prior to the pandemic, the lack of childcare was costly for American businesses, losing an estimated $12.7 billion annually because of their employees' childcare challenges. Nationally, the cost of lost earnings, productivity, and revenue due lack of childcare totaled $57 billion each year (Modestino, 2020). Based on our survey data, Barron's estimated that closing schools for COVID-19 cost roughly $700 billion in lost revenue and productivity or 3.5 percent of GDP (Salvaterra, 2020).

Moreover, the burden of childcare during the COVID-19 pandemic was not shared equally, but instead fell disproportionately on women. Our time use data shows that mothers significantly increased their time spent on remote learning and playing with children—more so than men—adding up to an extra 2 days per week—on top of their jobs. And this burden was felt more heavily by women with fewer options, greater needs, and less resources—who often had to rely on grandparents to provide back-up childcare.

But how much of the COVIC-19 "she-cession" was due to the lack of childcare versus women simply being more likely to work in industries and occupations that had greater employment losses? Using our rich dataset to construct more accurate dependent and independent variables, we find that mothers in the affected group were 15 percentage points more likely to experience an adverse labor market outcome—either job loss or reduced hours—due to childcare during the pandemic than similarly situated fathers. Most of this gender differential stemmed from impacts on the intensive (hours reduced) than extensive (job loss) margin. Although both mothers and fathers in the affected group also experience other decreases in well-being such as time spent sleeping and high psychological distress, the only gender differential we detected was for lower job satisfaction among mothers relative to fathers in the affected group. However, paid family leave—a rarely used benefit—was one of the few policies that helped narrow the gap in hours lost

across mothers and fathers in the affected group. Other new COVID-19 workplace practices such as working from home and subsidies for childcare costs had little to no effect on the gender gap in hours lost due to childcare.

However, it would be premature to conclude that traditional workplace benefits or newer COVID-19 workplace practices are ineffective without taking into consideration the limited opportunity to make use of these policies. Women were more concerned about losing their jobs than men which perhaps put a chilling effect on them accessing paid family leave when they needed it most during the pandemic. Working from home may not be very beneficial when you are the primary caregiver for a baby or toddler who cannot be left unsupervised or an elementary school-aged child who needs assistance with remote learning. Childcare subsidies are unhelpful when the supply of childcare is so low due to reduced capacity at daycares and fear of exposure to COVID-19. Moreover, absent large-scale support from the federal government, some employers found additional ways to support working parents such as offering flexible hours and providing virtual-learning centers for employee's children—efforts that helped their workers show up and be more productive at work (Hufford, 2020). Given how much our data showed that working parents needs vary, it is likely that managers can find many more ways to support their employees, even without the need for an official policy. Future research using more qualitative methods to uncover which policies and practices helped during the pandemic, for which groups of workers, and why could help inform ongoing efforts to address the childcare crisis in the U.S.

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Table 1. Basic Demographics and Household Characteristics of National COVID Survey Respondents, May/June 2020

	Number	Percent
Age		
18-25 years	252	10.32%
26-35 years	682	27.92%
36-45 years	1011	41.38%
46-55 years	380	15.55%
56-65 years	90	3.68%
66-75 years	13	0.53%
76 years or older	2	0.08%
No response	13	0.53%
Gender		
Female	1308	53.54%
Male	1117	45.72%
Transgender	5	0.20%
Intersex	1	0.04%
Non-conforming	1	0.04%
Other Gender	2	0.08%
Non Binary	3	0.12%
No response	6	0.25%
Race		
African American	335	13.71%
Asian	145	5.94%
Caucasian	1894	77.53%
Native American	10	0.41%
Mixed Race	35	1.43%
No response	24	0.98%
Ethnicity		
Hispanic	443	18.13%
Non-Hispanic	2000	81.87%
Education		
High school dropout	50	2.05%
High school grad	371	15.19%
Some college	536	21.94%
Associate's degree	292	11.95%
Bachelor's degree	644	26.36%
Master's Degree	411	16.82%
Professional Degree	27	1.10%
Ph.D	43	1.76%
No Response	69	2.82%

	Number	Percent/Mean
Marital Status		
Divorced	90	3.70%
Married	1652	67.6%
Separated	46	1.90%
Single	423	17.3%
Widowed	21	0.90%
Cohabitating	192	7.90%
No response	19	0.78%
Children		
Percent with children < 18	2443	100%
Percent with children < 5	1184	48.0%
Number of children	4305	1.77
No response	-	-
Other Adults Living in Household*		
Grandparent	217	8.9%
Aunt/uncle	88	3.6%
Other relatives	193	7.9%
Other adults	132	5.4%
No other adults	1858	76.1%
No response	28	1.15%
Household Income		
$25,000 or Less	186	7.6%
$25,001-$50,000	441	18.1%
$50,001-$75,000	474	19.4%
$75,001-$100,000	430	17.6%
$100,001-$200,000	712	29.1%
Greater than $200,000	178	7.3%
No response	22	0.90%

Source: Author's calculations using data collected by Pure Spectrum for N=2,443 respondents.
Note: *Respondents able to select multiple categories so percentage may sum to greater than 100.

Table 2. Childcare Arrangements and Labor Market Characteristics of National COVID Survey Respondents, May/June 2020

	Number	Percent
COVID Stay-at-Home Order in Effect		
Yes	1716	70.27%
No	233	9.54%
It was removed/expired	410	16.79%
Not sure	83	3.4%
No response	1	0.04%
COVID School/Daycare Closure		
Any closure	1923	73.34%
No closure	109	5.36%
No response	411	16.82%
Backup Childcare Available		
Yes	816	33.47%
No	1622	66.53%
No response	5	-
Backup Childcare Type		
Nanny	147	18.01%
Babysitter	221	27.08%
Daycare worker	108	13.24%
Grandparent	252	30.88%
Other relative	212	25.98%
Co-parent	60	7.35%
Older children	74	9.07%
Friends	116	14.22%
Emergency Daycare	35	4.29%
Other	251	10.27%
Spouse Work Status*		
Worked before	1674	85.23%
Worked during	1508	76.90%
Worked neither	270	11.0%
Work Status Before Pandemic*		
Employed	2406	98.49%
Employee full-time	1861	77.3%
Employee part-time	319	13.3%
Self-employed	206	8.6%
Gig work	20	0.82%

	Number	Percent
Work from Home		
WFH before pandemic	104	4.3%
Now WFH during pandemic	1404	57.6%
Not WFH	928	38.1%
No response	7	0.29%
Job Type		
In person, essential	565	23.1%
In person, not essential	298	12.2%
Not in person	1525	62.4%
No Response	55	2.25%
Change in Work Status*		
Hours reduced	1008	41.26%
Hours increased	281	11.5%
Gig work was cut	132	5.40%
Furloughed	304	12.44%
Unemployed	189	7.74%
Contract Terminated	112	4.58%
Took a new job	51	2.09%
No Response	-	-
Employment Status		
Employed	1960	80.0%
Unemployed	214	9.00%
Gray Area	269	11.0%
Spouse Earning Comparison		
Partner earns much more	544	27.4%
Partner earns slightly more	237	11.9%
About even	383	19.3%
Self earns slightly more	223	11.2%
Self earns much more	598	24.5%
No response	458	18.7%

Source: Author's calculations using data collected by Pure Spectrum for N=2,443 respondents.
Note: *Respondents able to select multiple categories so percentage may sum to greater than 100.

Table 3. Comparison between National COVID Survey and Current Population Survey May/June 2020

Characteristic	Survey	CPS	Difference
Age			Survey-CPS
18-25 years	10.4%	2.8%	7.6%**
26-35 years	28.1%	24.8%	3.2%
36-45 years	41.6%	41.8%	-0.2%
46-55 years	15.6%	24.5%	-8.8%**
56-65 years	3.7%	5.0%	-1.3%
66-75 years	0.5%	0.9%	-0.3%
76 years or older	0.1%	0.3%	-0.2%
Gender			
Male	46.1%	52.1%	-6.0%
Female	53.9%	48.0%	6.0%
Race			
African American	13.9%	12.4%	1.5%
Asian	6.0%	8.4%	-2.4%
Caucasian	78.3%	77.4%	0.9%
Native American	0.4%	1.2%	-0.8%
Mixed Race	1.5%	1.6%	-0.1%
Education			
Some High School	2.1%	3.7%	-1.5%
High School Diploma	15.6%	21.9%	-6.3%*
Some College	22.6%	14.7%	7.9%**
2-Year College Degree	12.3%	11.7%	0.6%
4-year College Degree	27.1%	26.4%	0.7%
Masters Degree	17.3%	14.4%	2.9%
Ph.D.	1.8%	2.8%	-1.0%
Professional School Degree	1.1%	2.0%	-0.9%

Characteristic	Survey	CPS	Difference
Marital Status			Survey-CPS
Married	68.2%	80.2%	-12.1%**
Divorced	3.7%	7.5%	-3.8%
Separated	1.9%	1.7%	0.2%
Single	25.4%	10.0%	15.4%**
Widowed	0.9%	0.6%	0.3%
Employment Status Prior to the Pandemic			
Unemployed	8.8%	8.7%	0.1%
Employed	80.2%	77.6%	2.6%
Furloughed/ Gig Work Cut/ Hours Reduced	11.0%	13.7%	-2.7%
Household Income			
$25,000 or Less	7.7%	6.0%	1.7%
$25,001-$50,000	18.2%	15.1%	3.1%
$50,001-$75,000	19.6%	18.0%	1.6%
$75,011-$100,000	17.8%	15.8%	1.9%
$100,001+	36.8%	45.1%	-8.3%

Source: Author's calculations using data collected by Pure Spectrum for N=2,443 respondents and the May/June 2020 Current Population Survey weighted sample of N=30,438 parents. See the Supplementary Materials for details.
Note: Significance levels for differences in means indicated by *p < 0.10, **p < 0.05, ***p < 0.01.

Table 4. Correlation between Female Labor Market Outcomes and Childcare, by Demographic Group May/June 2020

Characteristic	Adverse Labor Market Outcome			Conditional on Adverse LM outcome
	Percent reporting		Number of Hours lost If still working	Percent reporting Reason is childcare
	Any Job Loss	Any Hours Reduced		
Race				
White	24.4%	36.5%	-15.4	20.4%
African-American	31.5%**	40.9%	-17.8*	19.9%
Hispanic	29.3%	47.4%**	-14.8	13.9%*
Asian	25.0%	36.6%	-14.5	17.9%
Household income				
Greater than $75,000	25.5%	36.4%	-15.9	15.5%
Less than or equal to $75,000	27.7%	42.4%**	-15.1	20.4%*
Educational attainment				
College Degree	21.8%	37.4%	-15.1	18.3%
No College Degree	28.9%**	41.7%	-15.9	18.7%
Marital status				
Married/Cohabitating	25.4%	38.7%	-15.5	17.8%
Single/Separated/Divorced/Widowed	29.9%*	42.3%	-15.7	19.5%
Age of children				
No Child Less than Age 5	22.7%	34.9%	-15.8	15.0%
Child Less than Age 5	31.5%***	45.2%***	-15.3	21.6%**
Type of job				
Not in person, essential job	27.7%	40.6%	-15.6	17.4%
In person, essential job	24.7%	38.2%	-15.3	21.8%*

Source: Author's calculations using data collected by Pure Spectrum for N=2,443 respondents.
Note: Significance levels indicated by *p < 0.10, **p < 0.05, ***p < 0.01 for women relative to the reference group in each category using a two-tailed t-test. In the case of race, statistical significance is indicated testing each group individually relative to white.

Table 5. Impact of COVID-19 Childcare Shock on Mothers' Relative Labor Market Outcomes using Alternative Dependent and Independent Variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Any Adverse Labor Market Outcome				**Adverse Labor Market Outcome due to Childcare**					
	Has Child Under Age 10		Affected Group of Working Parents		Has Child Under Age 10		Affected Group of Working Parents			
	JL/RH	JL/RH	JL/RH	JL/RH	JL/HR	JL/HR	JL/HR	JL/HR	JL	HR
Female	-0.098***	-0.091***	-0.101***	-0.099***	-0.065*	-0.069*	-0.034	-0.040	-0.017	-0.043
	(0.034)	(0.034)	(0.030)	(0.031)	(0.037)	(0.039)	(0.033)	(0.036)	(0.062)	(0.043)
Subgroup of Interest	0.104***	0.071**	0.104***	0.065**	-0.033	-0.027	0.001	0.005	0.069	-0.022
	(0.031)	(0.031)	(0.029)	(0.029)	(0.032)	(0.032)	(0.029)	(0.030)	(0.055)	(0.035)
Subgroup*Female	0.077*	0.060	0.076*	0.069*	0.150***	0.154***	0.114***	0.119***	0.100	0.146***
	(0.042)	(0.041)	(0.040)	(0.039)	(0.044)	(0.045)	(0.042)	(0.042)	(0.072)	(0.051)
Controlling for:										
Race	No	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes
Income	No	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes
Education	No	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes
Stay at Home Order	No	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes
School Closure	No	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes
Backup Childcare	No	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes
Work Status Pre-COVID	No	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes
Job Type	No	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes
Observations	2425	2425	2425	2425	1453	1453	1453	1453	601	990
R^2	0.025	0.099	0.026	0.099	0.014	0.048	0.013	0.048	0.092	0.054

Source: Author's calculations using data from National COVID Survey respondents collected by Pure Spectrum.
Note: JL/HR = Job loss or reduced hours; JL=Job loss only; RH=Reduced hours only. Sample for columns (1) through (4) is all working parents, sample for columns (5) through (8) is all working parents experiencing an adverse labor market outcome, sample for column (9) is all working parents experiencing job loss, and sample for column (10) is all working parents experiencing a reduction in hours. Significance levels indicated by *p < 0.10, **p < 0.05, ***p < 0.01.

Table 6. Impact of COVID-19 Childcare Shock on Relative Well Being for Mothers in the Affected Group

	(1)	(2)	(3)	(4)	(5)	(6)
	Job Satisfaction		**High Psychological Distress**		**Sleeping Very Well**	
Female	-0.147***	0.020	-0.030	-0.029	-0.215***	-0.103***
	(0.051)	(0.052)	(0.030)	(0.031)	(0.027)	(0.027)
Affected	0.115**	0.090*	0.078***	0.063**	0.064**	0.024
	(0.049)	(0.048)	(0.029)	(0.029)	(0.026)	(0.025)
Affected*Female	-0.235***	-0.226***	0.061	0.055	-0.005	0.004
	(0.067)	(0.065)	(0.039)	(0.039)	(0.035)	(0.034)
Observations	2361	2361	2346	2346	2409	2409
R^2	0.035	0.123	0.015	0.036	0.065	0.176
Controlling for:						
Race	No	Yes	No	Yes	No	Yes
Income	No	Yes	No	Yes	No	Yes
Education	No	Yes	No	Yes	No	Yes
Stay at Home Order	No	Yes	No	Yes	No	Yes
School Closure	No	Yes	No	Yes	No	Yes
Backup Childcare	No	Yes	No	Yes	No	Yes
Work Status Pre-COVID	No	Yes	No	Yes	No	Yes
Job Type	No	Yes	No	Yes	No	Yes

Source: Author's calculations using data from National COVID Survey respondents collected by Pure Spectrum.

Note: Sample = all working parents with non-missing wellness outcome. Significance levels indicated by *p < 0.10, **p < 0.05, ***p < 0.01.

Table 7. Impact of Employer Policies Offered on Alleviating Gap in Hours Reduced due to Childcare for Affected Group

	(1) No Policy	(2) No Policy	(3) Family Leave	(4) Family Leave	(5) Childcare	(6) Childcare	(7) WFH	(8) WFH
Female	-0.054	-0.043	-0.068	-0.060	-0.023	-0.019	-0.023	-0.023
	(0.040)	(0.043)	(0.045)	(0.048)	(0.044)	(0.047)	(0.048)	(0.051)
Affected	-0.020	-0.022	-0.036	-0.040	-0.011	-0.020	-0.001	-0.009
	(0.035)	(0.035)	(0.039)	(0.040)	(0.043)	(0.044)	(0.043)	(0.043)
Affected*Female	0.138***	0.146***	0.126**	0.138**	0.149**	0.163***	0.087	0.103*
	(0.050)	(0.051)	(0.057)	(0.058)	(0.058)	(0.059)	(0.061)	(0.062)
Policy			-0.059	-0.047	0.117*	0.110*	0.092	0.082
			(0.064)	(0.066)	(0.061)	(0.063)	(0.057)	(0.058)
Affected*Policy			0.081	0.080	-0.068	-0.053	-0.058	-0.044
			(0.084)	(0.086)	(0.075)	(0.076)	(0.073)	(0.074)
Female*Policy			0.062	0.071	-0.123	-0.119	-0.096	-0.070
			(0.099)	(0.101)	(0.115)	(0.117)	(0.086)	(0.087)
Female*Affected*Policy			0.017	-0.006	-0.028	-0.034	0.166	0.141
			(0.123)	(0.125)	(0.134)	(0.136)	(0.109)	(0.111)
Controls								
Race	No	Yes	No	Yes	No	Yes	No	Yes
Income	No	Yes	No	Yes	No	Yes	No	Yes
Education	No	Yes	No	Yes	No	Yes	No	Yes
Stay at Home Order	No	Yes	No	Yes	No	Yes	No	Yes
School Closure	No	Yes	No	Yes	No	Yes	No	Yes
Backup Childcare Available	No	Yes	No	Yes	No	Yes	No	Yes
Work Status Before Pandemic	No	Yes	No	Yes	No	Yes	No	Yes
Job Type (Essential Worker)	No	Yes	No	Yes	No	Yes	No	Yes
Observations	990	990	985	985	986	986	986	986
R^2	0.013	0.054	0.017	0.059	0.021	0.061	0.020	0.061

Source: Author's calculations using data from National COVID Survey respondents collected by Pure Spectrum.

Note: Sample = all working parents experiencing a reduction in hours. Significance levels indicated by *p < 0.10, **p < 0.05, ***p < 0.01.

Table 8. Impact of Employer Policy Take-Up on Alleviating Gap in Hours Reduced due to Childcare for Affected Group

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	No Policy	No Policy	Family Leave	Family Leave	Childcare	Childcare	WFH	WFH
Female	-0.054	-0.043	-0.054	-0.043	N/A	N/A	-0.040	-0.043
	(0.040)	(0.043)	(0.040)	(0.044)	(N/A)	(N/A)	(0.068)	(0.070)
Affected	-0.020	-0.022	-0.019	-0.019	N/A	N/A	-0.033	-0.036
	(0.035)	(0.035)	(0.036)	(0.037)	(N/A)	(N/A)	(0.074)	(0.076)
Affected*Female	0.138***	0.146***	0.142***	0.146***	N/A	N/A	0.186**	0.199**
	(0.050)	(0.051)	(0.052)	(0.053)	(N/A)	(N/A)	(0.092)	(0.094)
Policy			0.058	0.071	N/A	N/A	0.064	0.059
			(0.110)	(0.111)	(N/A)	(N/A)	(0.061)	(0.067)
Affected*Policy			-0.020	-0.037	N/A	N/A	0.009	0.011
			(0.135)	(0.136)	(N/A)	(N/A)	(0.084)	(0.086)
Female*Policy			0.824**	0.768*	N/A	N/A	-0.005	0.007
			(0.400)	(0.403)	(N/A)	(N/A)	(0.085)	(0.087)
Female*Affected*Policy			-0.881**	-0.784*	N/A	N/A	-0.072	-0.084
			(0.418)	(0.421)	(N/A)	(N/A)	(0.112)	(0.113)
Controls								
Race	No	Yes	No	Yes	No	Yes	No	Yes
Income	No	Yes	No	Yes	No	Yes	No	Yes
Education	No	Yes	No	Yes	No	Yes	No	Yes
Stay at Home Order	No	Yes	No	Yes	No	Yes	No	Yes
School Closure	No	Yes	No	Yes	No	Yes	No	Yes
Backup Childcare Available	No	Yes	No	Yes	No	Yes	No	Yes
Work Status Before Pandemic	No	Yes	No	Yes	No	Yes	No	Yes
Job Type (Essential Worker)	No	Yes	No	Yes	No	Yes	No	Yes
Observations	990	990	987	987	986	986	990	990
R^2	0.013	0.054	0.018	0.060	0.021	0.061	0.016	0.057

Source: Author's calculations using data from National COVID Survey respondents collected by Pure Spectrum.

Note: Sample = all working parents experiencing a reduction in hours. Significance levels indicated by *p < 0.10, **p < 0.05, ***p < 0.01