Changes in Parents' Domestic Labor During the COVID-19 Pandemic

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ABSTRACT

Stay-at-home orders and the removal of care and domestic supports brought about by the COVID-19 pandemic substantially disrupted parents' work and family lives. This study leverages this exogenous event to test key theoretical explanations of couples' divisions of domestic labor. Using novel data from 1,025 partnered, different-sex US parents, our analysis shows an overall increase in domestic responsibilities for mothers, who were already doing most of the household labor, as well as an increase in fathers' contributions. Driven by increases in fathers' time spent on housework and childcare, we find that both mothers and fathers report a general shift toward more egalitarian divisions of household labor. Consistent with a time availability perspective, the findings indicate the relevance of increased time at home —due to unemployment, reduced work hours, and telecommuting— as a fundamental factor underlying change in parents' division of domestic responsibilities.

INTRODUCTION

On March 11th, 2020 the World Health Organization declared the COVID-19 outbreak a global pandemic. Due to state stay-at-home orders, the pandemic has profoundly transformed the lives of nearly every American household. Rates of unemployment during the early months of the pandemic were higher than any time since the Great Depression (US Bureau of Labor Statistics 2020). For those able to retain employment, telecommuting became common, altering the nature of work (Guyot and Sawhill 2020). The closings of schools, childcare centers, and businesses providing domestic services removed important supports for parents' labor force participation. Additionally, women were more likely than men to be laid off or to reduce work hours during the pandemic (Bureau of Labor Statistics 2020; Collins et al. 2020), raising concerns about increased gender inequalities in domestic and paid labor, setting back decades of progress. Though gender gaps in paid labor grew during the early months of the pandemic, it remains unclear how the pandemic impacted parents' divisions of domestic labor at home.

The goal of this study is to leverage the natural experiment of the COVID-19 pandemic to test theoretical explanations of the influence of work conditions on inequality within families. Observational studies clearly demonstrate that women spend more time in domestic labor than men. Yet, selection processes related to endogeneity and selection bias impede our understanding of how factors like time availability, work-family supports, relative earnings, and gender affect household divisions of labor. The pandemic provides methodological advantages to gaining empirical insights on the gendered division of labor. The numerous changes thrust on families in an effort to mitigate the pandemic facilitated an exogenous event that can be leveraged to test fundamental theories (e.g., relative resources, time availability, gender perspective) and answer

key questions about men's and women's domestic labor (e.g., do men perform more domestic labor when workplace barriers are removed?).

Application of these theories to the social and economic conditions of the COVID-19 pandemic suggest dual possibilities regarding changes in men's and women's time in, and division of, domestic labor. On one hand, the pandemic has the potential to exacerbate gender inequalities by thrusting additional domestic responsibility on mothers already disproportionately bearing domestic burdens, even for dual-earning couples (Berk 1985; Blair and Lichter 1991; Pew 2015; Yavorsky, Kamp-Dush, and Schoppe-Sullivan 2015). If mothers continue to perform most domestic duties, declines in labor force participation and the closure of schools and daycares, along with children engaging in remote learning, likely increased domestic burdens for mothers.

On the other hand, the pandemic may provide an opportunity for fathers to act on their stated desires to be more engaged at home (Dermott 2008; Miller 2010). Parents' division of domestic labor may have become more equal if fathers' increases in housework and childcare outpaced new responsibilities for mothers. The pandemic removed workplace barriers (e.g., lack of paid leave, inability to telecommute) often cited as key impediments to fathers' domestic involvement (Boston College Center for Work and Family 2019; Lenhart, Swenson, and Schulte 2019). Nonetheless, it is an open empirical question whether fathers increased their time in housework and childcare and whether such increases offset increases in mothers' domestic labor.

Relying on novel survey data collected in April 2020 from 1,025 US parents in different-sex relationships, we assessed shifts in parents' divisions of domestic labor and time spent doing domestic work since the beginning of the pandemic. We then examined how these changes are associated with parents' work and family arrangements during the pandemic and the use/loss of

work-family supports. In doing so, this study empirically assesses how couples' divisions of labor changed due to the exogenous shock of the pandemic, and tests key theories of gender inequality at home.

BACKGROUND

Exacerbating Gender Inequality during the COVID-19 Pandemic

Gender is the primary determinant of who does the domestic labor among different-sex couples (Berk 1985; Ferree 1990). According to a gender structure perspective (Risman 1999; Ridgeway and Correll 2004), gender organizes our social lives by controlling access to resources and opportunities, while shaping cultural interpretations of our behavior. Hegemonic cultural ideals regarding appropriate gender behavior constitute an important part of the gender structure (Goffman 2009 [1963]; Thébaud, Kornrich, and Ruppanner 2019; West and Zimmerman 1987). Following gender conventions, couples may therefore conclude that additional housework and childcare stemming from the pandemic will be shouldered by women. Even when couples are disinclined to gender their division of domestic labor, they often still rely on hegemonic gender conventions when situations are unclear or equality is difficult to achieve (Gerson 2010; Blaisure and Allen 1995). The anomic and intractable conditions of the pandemic, therefore, may encourage different-sex partners to adhere to gender norms during uncertain times.

Gender norms may intersect with the economic conditions of the pandemic to also reinforce women's responsibility for domestic labor. According to the time availability and relative resources hypotheses (Stafford, Backman, and Dibona 1977; Blood and Wolfe 1960), domestic labor is performed by the partner with the most available time and lowest relative earnings. Women are more likely to be unemployed or working part-time than men, and this trend appears to be exacerbated during the pandemic, as unemployment rates for women jumped

from 4.4% in March 2020 to 16.5% in April (US Bureau of Labor Statistics 2020). Employed women, especially those with young children, have reduced their time at work during the pandemic (Collins, Landívar, Ruppanner, and Scarborough 2020). Women are also working from home more often during the pandemic, which increases available time to complete domestic work (Sawhill and Guyot 2020). With more time availability and fewer relative resources compared to male partners, women may experience a disproportionate increase in time spent in domestic labor relative to men during the pandemic.

Employment and paid work hours fell for men as well during the early months of the pandemic, but not as much as for women (Collins et al. 2020; U.S. Bureau of Labor Statistics 2020). Though this suggests an increase in time availability and a potential decrease in relative resources, such changes in men's economic circumstances may not portend greater domestic contributions as unemployed men, and men who earn less than their partners spend less time on housework, on average, than their partners (Gough and Killewald 2011; Rao 2020). This is often explained as the result of gender display (Brines 1994; Bittman et al. 2000) or gender deviance neutralization (Greenstein 2000) processes where unemployed and financially dependent men assert their masculinity by refusing housework, and/or women retain responsibility for housework to reduce the gender deviance of their breadwinner status. Decreases in men's employment and relative earnings during the COVID-19 pandemic may therefore also result in increased domestic work for women.

Even if both partners maintain pre-pandemic levels of employment, women may be more likely to increase their time in housework and childcare and do a larger share during the pandemic. Autonomy theory (Gupta 2007) suggests that women's time in domestic labor is a function of their own paid earnings. Earnings enable some women to pay for market substitutes

for domestic work, leading to reduced time in domestic work for themselves and more equal divisions in their partnership (Bianchi et al. 2012). Without the option to outsource domestic labor, employed women may see their time and share of domestic work increase. The loss of options to outsource domestic labor may also negatively affect their earnings during the pandemic, which may in turn thrust even more domestic responsibilities on women given their weakened bargaining position relative to their partners (Blair-Loy 2009; Carlson and Lynch 2017; Stone 2008).

Reducing Gender Inequality during the COVID-19 Pandemic

There are reasons to expect that fathers may increase their time in domestic work during the COVID-19 pandemic, leading to more equal sharing of domestic labor. One of the primary reasons to expect more domestic participation on the part of fathers is the appeal of conventional, man-as-earner/woman-as-homemaker family arrangements has decreased over the decades (Scarborough, Sin, and Risman 2019). The gender ideology hypothesis (Stafford, Backman, and Dibona 1977) indicates that housework performance is driven by one's beliefs about domestic roles. Although support for gender equality in the public sphere is more widespread than support for egalitarianism in the private sphere (Pepin and Cotter 2018), approximately 70 percent of men and 77 percent of women in the 2018 General Social Survey disagreed with the separate spheres notion that it is better for men to work and women to tend to the home (NORC 2019).

Different-sex couples struggle to achieve egalitarian domestic arrangements, often attributed to the persistence of structural barriers, such as a lack of family-friendly workplace policies (Pedulla and Thébaud 2015) and to an ideal worker culture of universal availability that pushes men out of the home and women into it (Collins 2019). Many fathers express desires to be more engaged parents and partners, but that lack of support from their workplaces as well as a

lack of policies that enable them to be more engaged are key barriers to being more involved at home (Boston College Center for Work and Family 2019; Lenhart, Swenson, and Schulte 2019).

The COVID-19 pandemic may potentially lift some of these barriers due to workplace and public policies that have increased job flexibility as well as access to paid leave. Although job flexibility has been associated with women's but not men's time in domestic labor (Noonan, Estes, and Glass 2007; Silver and Goldscheider 1994), more recent research indicates that fathers who telecommute from home, even if only occasionally, do more childcare than fathers who do not work from home (Carlson et al. 2020; Holmes et al. 2020; Lyttleton, Zang, and Musick 2020). A recent study by Carlson and colleagues (2020) also shows that fathers who work from home spend more time in housework if their partners are employed full-time. Taking longer family leave is also associated with greater father involvement in childcare and housework (Petts and Knoester 2018; Bünning 2015). Passed in late March, the Families First Coronavirus Response Act (FFCRA) provides employees of covered employers (i.e., public and private employers with fewer than 500 employees) with up to two weeks emergency paid sick leave and up to 10 weeks of emergency paid family and medical leave (U.S. Department of Labor https://www.dol.gov/agencies/whd/pandemic/ffcra-employee-paid-leave). Notably, workers can use this policy to take paid leave to care for a child whose school or childcare center has closed due to the pandemic. As such, increased work-family supports for fathers may increase their time in, and shares of, domestic labor.

More egalitarian divisions of domestic labor may stem not only from fathers doing more, but also from a reduction in mothers' time in tasks. Some time demands have most certainly decreased since the pandemic, such as shuttling children to and from schools, events, and practices. These tasks are significant contributors to parents' time commitments and their

reduction is likely to suppress mothers' time in domestic labor, as they are typically components of intensive mothering (Hays 1998). Reductions in mothers' time due to the elimination of these tasks, regardless of whether fathers change their behavior, may also contribute to a more egalitarian division of domestic labor during the pandemic.

Hypotheses

Theory and past research suggest several competing hypotheses regarding changes in men's and women's domestic labor during the COVID-19 pandemic.

Changes to Fathers' and Mothers' Time in, and Division of, Domestic Labor

Hypothesis 1a: Mothers will do more domestic labor during the COVID-19 pandemic and the division of domestic labor will become more unequal

Hypothesis 1b: The division of domestic labor will become more equal during the pandemic as fathers increase their time in domestic labor

Paid Work and Parents' Domestic Labor

Hypothesis 2a: Reduced work hours, job loss, and working at home will be associated with more domestic labor among mothers and fathers during the COVID-19 pandemic

Hypothesis 2b: Reduced work hours and job loss among fathers will be associated with decreases in fathers' domestic labor and increases in mothers' domestic labor during the pandemic

Relative Earnings and Parents' Domestic Labor

Hypothesis 3a: Lower earnings relative to one's partner during the pandemic will be associated with increases in one's domestic labor

Hypothesis 3b: Fathers' lower relative earnings compared with mothers during the pandemic will be associated with decreases in fathers' domestic labor and increases in mothers' domestic labor

Domestic Supports and Parents' Domestic Labor

Hypothesis 4: The loss of domestic supports, such as childcare and schools, will be associated with increases in domestic labor among mothers during the pandemic

The COVID-19 Pandemic as a Natural Experiment

Testing theoretical explanations for the gendered division of domestic labor is difficult given the paucity of couple-level data on domestic labor and issues of selection inherent in observational data. There is persistent ambiguity in the literature explaining couples' divisions of labor, perhaps due to unverified assumptions about causal associations (for review see Geist and Ruppanner 2018). Random assignment of couples to various labor arrangements is generally not feasible in social research. As such, researchers must contend with the possibility that selection processes contaminate associations between the division of domestic labor and its covariates. Endogeneity and unobserved variable bias are especially problematic. Research highlights bidirectional associations between men's and women's time in domestic labor and paid work, earnings, and gender ideology (Carlson and Lynch 2013; 2017; Cunningham 2008).

While some of these issues can be addressed by using instrumental variable models, good instruments are difficult to identify and poor instruments will actually contribute to biased estimates (Bollen 2012). Selection bias also impedes tests of explanatory hypotheses about partners' performance, and divisions of, domestic labor, leading to biased estimates. Not only are unobserved confounders an issue, but due to the absence of work-family policies in the US,

systematic selection bias in access to work-family benefits obstructs our understanding of how supports like childcare and job flexibility affect partners' domestic labor.

Due to shut-down measures designed to curtail the spread of COVID-19, the pandemic constitutes an exogenous shock to couples' paid work arrangements and work-family supports, via the closure of schools, shuttering of businesses, increased telecommuting, and elimination of market substitutes for housework. The near universal disruption, and the changes they introduce to couples' paid work and work-family supports enables a pseudo-experimental test of key theories by reducing concerns about temporal ordering and selection bias. This study follows the approach of other scholars leveraging period effects at a population level— such as hurricanes, earthquakes, and terrorist attacks— which have been used to understand behaviors and attitudes such as criminal behavior, birth outcomes, and racism (Behrman and Weitzman 2016; Kirk 2012; Lauderdale 2006; Legewie 2013, 2016; Torche 2011). The natural experiment study design addresses the ambiguities of selection processes that generally muddle interpretations of couples' division of domestic labor and their covariates.

DATA AND METHODS

Data

Data for this study comes from an original sample obtained from Prolific (www.prolific.co), an opt-in platform designed to facilitate panel-based surveys. Prolific was intentionally built for scientific research and its samples are a substantial improvement over other types of nonprobability samples (e.g., convenience and snowball sampling). Prolific elicits panelists' demographic characteristics prior to granting eligibility to participate on the platform, decreasing contamination of sample selection stemming from dishonest participants (Palan and

Schitter 2018). Samples from Prolific are more diverse than participants from MTurk and the data quality is comparable, and in some ways preferable (Peer et al. 2017).

Although Prolific panels are not comprised of a probability sample that would be necessary for making inferences about prevalence of behaviors in the population, non-probability samples find remarkably similar patterns of statistical significance in both experiments and observational studies (Baker et al. 2013; Coppock 2019; Jeong et al. 2019). Additionally, data obtained from panel-based samples tend to be fairly representative of those with regular internet access (Tourangeau, Conrad, and Cooper 2013), and results do not differ substantially from probability-based samples once demographic variables are sufficiently accounted for (Levay, Freese, and Druckman 2016).

The intent of our study is to leverage the natural experiment of the pandemic to test theory, rather than generalize our findings and make inferences about the prevalence of any specific phenomenon. That is, we are less interested in identifying specific percentages of the population that experience some outcome (e.g., the exact percentage of couples who equally share housework) than we are in understanding whether the changed work environment due to the pandemic is associated with general shifts in couples' behavior. Thus, panel-based surveys are an appropriate data source for modeling relationships, as we do in this study, and concerns about external validity largely can be addressed through means other than reliance on probability-based samples (Lucas 2003).

We obtained a sample of 1,262 respondents from Prolific that was restricted to parents in the United States who resided with a spouse or partner and a biological child. Data collection took place in late April 2020, approximately one month after the World Health Organization declared the COVID-19 outbreak a pandemic. We oversampled men, Black people, individuals

who did not complete college, and people who identify as conservative to increase the diversity of our sample. After employing data quality checks to identify respondents who did not complete most of the survey, respondents who did not pass the attention filters, and respondents with multiple submissions, our sample was reduced to 1,157 respondents (i.e., 9% of initial respondents were removed due to data quality issues). For this study, we excluded respondents who identified as a gender other than male or female (N = 8) and respondents who reported being in a same-sex relationship (N = 86).[1] After these restrictions, our analytic sample consisted of 1,060 respondents. Listwise deletion of the small amount of missing values in our data results in a final sample size of 1,025 parents who reside with a spouse/partner and child.

To account for demographic variation potentially biasing our sample, all results are weighted using estimates from the April 2020 Current Population Survey (CPS) to be representative of American parents who reside with a partner and child based on parent's gender, age, and race/ethnicity. We also compared our sample with other data sources to assess sample representativeness. Using the CPS, our sample is comparable with national estimates for different-sex couples with children at home in terms of the percentage who are married (89% vs. 92% in CPS), the average number of children (1.94 vs. 1.93), and the percentage of mothers (33 vs. 31%) and fathers (10% vs. 11%) out of the labor force prior to the pandemic.[2] The percentage of individuals who identify as having conservative political ideologies is also comparable with national estimates in the GSS (32% vs. 33%), and the percentage of individuals with household incomes under $40,000 in our sample is comparable to co-resident parents in the Survey of

[1] Parents in same-sex relationships were not included in this study because our focus is on gender differences, and use of variables that account for gendered variations do not operate in the same way for same-sex couples. Supplementary analyses that included same-sex couples found no significant difference in the trends reported here between same-sex couples and different-sex couples (i.e., the coefficient for same-sex vs. different-sex parent was not statistically significant).

[2] Estimates for prior to pandemic come from February 2020 CPS. Estimates from March 2020 CPS were identical.

American Parents (18% vs. 19%).[3] Even so, it is important to note that college educated parents and parents with no religious affiliation are over-represented in this sample.

We also compared key variables in our sample to equivalent items in national surveys. Descriptive statistics show our panelists were slightly less likely to report equal sharing of childcare tasks than in the Survey of American Parents respondents (Pew 2015). Consequently, any increases in equal sharing among our panelists are likely to be a conservative estimate of the prevalence of equal partnerships. The decline in work hours among parents was higher in our sample than in a recent CPS-based study (Collins et al. 2020), but this may be due to our focus on co-resident parents as opposed to married parents. Indeed, decline in work hours in our sample is comparable with recent results using a more diverse UK sample (Chung et al. 2020).

Division of Domestic Labor

Respondents were asked to report on the division of domestic labor between themselves and their partners (options of *0=I do it all, 1=I do more of it, 2=we share it equally, 3=my partner does more of it, 4=my partner does it all*) both *before* and *during* the pandemic. Additionally, respondents also reported on how their time, and their partners' time, in domestic tasks changed since the start of the pandemic (options of *-2=doing much less, -1= doing somewhat less, 0=no change, 1=doing somewhat more, 2=doing much more*). For housework, respondents reported on the following tasks: preparing and cooking meals, laundry, shopping for groceries and other household needs, washing dishes, and house cleaning. For childcare, respondents were asked to report on behavior specific to their youngest child. For parents of younger children (younger than age 6), respondents reported on the following tasks: physical care (e.g., bathing, feeding, dressing), talking/listening to child, looking after child, putting child

[3] The percentage of individuals reporting six-figure incomes is also comparable (35% in both samples).

to bed, reading, playing, organizing, and enforcing rules. Parents of older children (ages 6-17), reported on: talking/listening to child, monitoring, attending events, reading, playing, organizing, enforcing rules, picking up/dropping off, and helping with homework.

For our analyses, we report on summary measures of housework and childcare that combine information on all these tasks. Respondents reported on both their own behavior and their partner's behavior. To construct measures for parents' divisions of housework and childcare, we first create gendered indicators of the relative division of housework and childcare based on respondents' reports (i.e., *0=mother does it all, 1=mother does more of it, 2=shared equally, 3=father does more of it, 4=father does all of it*). We then create mean scales ranging from 0 to 4 to indicate the division of labor both *before* and *during* the pandemic, and produce categories for *mother does majority, shared equally,* or *father does majority*.[4] Second, we utilize information on how time spent in domestic labor has changed to create summary measures for mean change in housework and childcare, Scores on individual tasks are averaged to create a mean score ranging from -2 (*doing much less*) to 2 (*doing much more*), with 0 equaling no change. Estimates for fathers' change in domestic labor come from averaging both fathers' reports and mothers' reports of their partner, and mothers' change in domestic labor come from averaging both mothers' reports and fathers' reports of their partner. This provides a conservative estimate by avoiding biases that may exist when relying on only one parent's reports (Kamo 2000; Lee and Waite 2005). From the mean change score, three dummy variables are created: *father/mother doing more* (mean score of 0.5 or higher), *father/mother no change* (mean score between -0.5 and 0.5), *father/mother doing less* (mean score of -0.5 or lower).

Predictors of Parents' Domestic Labor

[4] Shared equally is defined as each parent contributes 40-60% of the housework and childcare (corresponding to a scale score of between 1.6 and 2.4 out of 4).

We include several variables as primary predictors of parents' domestic labor during the pandemic. Parents' *employment status* during the pandemic is classified into one of six categories: both parents work full-time (used as reference group), father works full-time and mother works part-time, father works part-time and mother is employed (either full- or part-time), father is a single earner, mother is a single earner, or both parents are unemployed. We also include measures to indicate whether parents experienced *job loss* due to the pandemic (father only, mother only, both parents, neither parent) and whether either parent is an *essential worker*, which is classified as a parent employed as a healthcare worker, first responder, grocery store/food service worker, or postal/delivery worker. *Household income* during the pandemic ranges from 1 = less than $1,000/month to 7 = $9,000/month or more. We also include measures to indicate parents' *relative earnings* during the pandemic, based on respondents' reports of relative earnings (father earns more, mother earns more, both parents earn relatively the same). Finally, we also account for respondents' *traditional gender attitudes* ($\alpha = .72$), which indicates agreement on six statements such as "preschool children are likely to suffer if their mother is employed" and "if a husband and wife both work full-time, they should share household tasks equally." Responses are coded such that higher values indicate more traditional gender attitudes.

Several variables assess parents' use of work-family supports and support services. Respondents reported on whether they and their partners *reduced work hours/left job voluntarily* (father only, mother only, both parents, neither parent) or *worked from home* (worked from home exclusively, worked from home sometimes, or did not work from home/did not work at all) during the pandemic. To indicate loss of support services during the pandemic we include measures for *childcare hours before the pandemic* (0 hours, 1-20 hours, 21+ hours) and whether parents were creating *e-learning* content for their children (1=yes) during the pandemic.

Sociodemographic Controls

Numerous factors may be implicated in the associations among parents' work characteristics, access to and use of work-family supports, and change in parents' domestic labor during the pandemic. We incorporate a range of sociodemographic factors which are used as statistical controls in multivariate models. Descriptive statistics for these variables are presented in Table 1. First, at the macro-level, how families respond to the pandemic is likely shaped by the *existence and timing of stay-at-home orders*. We classified state of residence as innovators (stay-at-home order implemented by March 23,[5] used as reference group), early adopters (stay-at-home order implemented between March 24-March 30), late adopters (stay-at-home order implemented after March 30), and resisters (no stay-at-home order issued). Within families, *parental age* (Gull and Geist 2020; Sanchez 1994), *own and partners' health* (ranging from 1=fair/poor to 4=excellent; Ross and Bird 1994), *religious affiliation* (Gull and Geist 2020), *whether partners are married or cohabiting* (Gull and Geist 2020; Kamo and Cohen 1998), child characteristics like *youngest child's age* and *number of children* (Kamo and Cohen 1998; Sanchez 1994), *race/ethnicity* (Maxwell and Solomon 2020; Pepin, Sayer, and Casper 2018; US Bureau of Labor Statistics 2020), and *education* (Davis and Greenstein 2004; Galinsky, Sakai, and Wigton 2011; Lachance-Grzela and Bouchard 2010) also likely shape parents' employment, earnings, work-family benefits, and changes in paid and unpaid labor.

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Analytic Strategy

We first consider how parents' work and family lives have changed since the beginning of the COVID-19 pandemic. To do this, we provide a descriptive overview of how parents' time

[5] California was the first state to implement a stay-at-home order, and 8 additional states followed suit in the days after (Mervosh et al. 2020).

in, and division of, work and domestic labor has changed since the beginning of the pandemic (Table 2 and Figure 1). We then descriptively examine how changes in parents' time spent in domestic labor are associated with the division of household labor since the beginning of the pandemic (Figure 2). After illustrating these key trends, we analyze how work-family arrangements and work-family supports are associated with changes in parents' time spent in housework and childcare to better understand why these changes have occurred. For this analysis, we use multinomial logistic regression models to predict changes in mothers' and fathers' domestic labor, using separate models for mothers and fathers (Tables 3 and 4).[6]

RESULTS

Parents' Labor Arrangements and Work-Family Supports during COVID-19 Pandemic

Summary statistics for parents' divisions of domestic labor, work conditions, and work-family support both before and during the COVID-19 pandemic are presented in Table 2. Consistent with Hypothesis 1b, changes in the division of housework and childcare since COVID-19 restrictions were implemented show increases in equal sharing of domestic labor. The percentage of couples who share housework relatively equally increased from 26% before the pandemic to 42% during the pandemic ($p < .001$). Similarly, the percentage of couples who share childcare relatively equally increased from 45% before the pandemic to 56% during the pandemic ($p < 001$). Although fathers are more likely to report sharing housework and childcare relatively equally than women at both time points, these trends persist even when focusing only on mothers' reports. According to mothers, the percentage of couples who share domestic labor relatively equally increased from 15% to 29% for housework ($p < .001$) and from 29% to 39%

[6] We do not use a continuous measure of change in time spent in domestic labor, because this approach assumes all changes are equivalent (e.g., changing from doing somewhat more to doing much more is equivalent to changing from doing somewhat less to no change). Analyses suggest there are different processes distinguishing between those who are doing more (vs. no change) and those who are doing less (vs. no change).

for childcare (p = .001). Additionally, these shifts do not appear to be due to selection; increases in reports of equal shares of housework and childcare during the pandemic are observed across a wide range of sociodemographic characteristics (see Figure A1 in appendix). Concomitant with increases in sharing of domestic work, the proportion of parents reporting conventional divisions of housework and childcare decreased significantly. The proportion of parents reporting conventional divisions of housework decreased 17 percentage points from 64% to 47% while the proportion reporting conventional divisions of childcare decreased 14% percentage points from 50% to 36% (p < .001).

Similar trends persist when focusing solely on mothers' reports; the proportion of mothers reporting conventional divisions of housework decreased 15 percentage points (from 82% to 67%; p < .001) and the proportion reporting conventional divisions of childcare decreased 12 percentage points (from 69% to 57%; p < .001). Overall, consistent with Hypothesis 1b, although variation exists in the proportion of couples sharing domestic labor relatively equally, there is consensus that more couples are sharing housework and childcare relatively equally during the pandemic than before the pandemic.

----- Insert Table 2 about here -----

Although the division of domestic work became more equal during the pandemic, parents' divisions of paid labor became less equal. During the pandemic the percentage of parents who both worked full-time fell from 35% to 21% (p < .001). Though father single-earner arrangements grew in frequency during the pandemic, so did arrangements where fathers worked less than full-time (i.e., mother single-earner; father part-time). Though paid work became less egalitarian, earnings became somewhat more equal during the pandemic. Fathers were most

likely to be the sole or primary earners in families during the pandemic (58%), but these arrangements made up a smaller share than before the pandemic (63%, $p < .001$).

Unemployment and work flexibility increased during the pandemic and this resulted in a substantial increase in the number of both mothers and fathers at home. In 7% of families, both parents were unemployed during the pandemic, a small 3 percentage point increase from before the pandemic began ($p < .05$). Nonetheless, 17% of households experienced job loss for at least one parent since the beginning of the pandemic, and 22% of families had at least one parent reduce their paid work hours or leave their job voluntarily. Moreover, 41% of fathers and 35% of mothers were working from home exclusively during the pandemic compared to before the pandemic where only 9% of fathers and 12% of mothers worked from home exclusively.

Results from Table 2 show that time demands for childcare and schooling increased during the pandemic as well. On average, young children spent 13 hours a week in daycare prior to the pandemic and just over 1 hour per day in care during the pandemic, which is due to a drastic decline in the number of children attending care. The closure of schools also resulted in additional domestic work, as 48% of these parents were creating online educational content during the pandemic.

Pandemic Changes in Divisions of Housework and Childcare

Since an equal division of household labor can be the product of women doing less, men doing more, or both, we examined change in men's and women's time in domestic tasks (Figure 1) and how change in time allocation was associated with the division of labor during the COVID-19 pandemic (Figure 2). Figure 1 indicates that significantly more fathers (34%; $p < .05$) increased their time in housework since the pandemic began than mothers (25%). The statistically significant gender differences do not hold up when focusing only on mothers'

reports, but mothers still report that a sizeable number of fathers are spending more time in housework (26%). Conversely, nearly twice as many mothers (17%; $p < .05$) were doing less housework compared with fathers (9%), and this difference persists when restricted to only mothers' reports (although not statistically significant; 14% vs. 11%). Patterns for time in childcare are similar and statistically significant, though fewer mothers report doing less childcare (13%).

----- Insert Figure 1 about here -----

Figure 2 shows how the division of domestic labor during the pandemic varies by changes in mothers and fathers time in domestic tasks. Consistent with Hypothesis 1b, these results indicate that increases in egalitarian divisions of domestic labor are associated largely with fathers doing more household labor, but also with mothers doing less. In partial support of Hypothesis 1a, evidence also suggests, however, that domestic burdens increased for mothers who were already doing the majority of tasks.

----- Insert Figure 2 about here -----

Parents were significantly more likely to report sharing domestic labor equally when they reported fathers doing more. 53% of those who reported fathers doing more were sharing housework equally compared to 7% who reported fathers doing less. For childcare, 65% of those reporting fathers doing more were sharing responsibilities equally compared to 30% who reported fathers doing less. Although only a handful of fathers were doing less domestic labor during the pandemic, most were in couples where mothers did the majority of domestic work. The association between more domestic work among fathers and sharing housework and childcare during the pandemic also persists in multivariate models (see Table A1 in appendix).

Among mothers, more than 70% who reported doing more housework since the pandemic began were primarily responsible for housework during the pandemic. Moreover, among mothers doing less, just one-quarter were doing the majority of housework themselves while nearly half were sharing housework equally with their partner. Supplemental analyses (see Tables A2 and A3 of online Appendix) demonstrate that among mothers doing more housework, most were responsible for the majority of housework before the pandemic. Moreover, only 7.5% of mothers doing the majority of housework during the pandemic were sharing tasks equally with their partners pre-pandemic. The patterns in childcare in Figure 2 among mothers are similar but less pronounced. 43% of mothers doing more childcare were responsible for most of it during the pandemic compared to less than one-quarter of mothers whose childcare time decreased. Change in mothers' time in childcare is unassociated with sharing childcare equally during the pandemic, though parents were more likely to report fathers doing the majority of both childcare and housework when mothers were doing less during the pandemic than before.

Predicting Change in Parents' Performance of Housework and Childcare

Next, we turn to our results from multinomial logistic regression models analyzing the degree to which parental characteristics are associated with changes in time spent in housework and childcare during the pandemic. Results are shown in Tables 3 and 4, disaggregated by parents' gender. Though fathers were most likely to reduce their time in housework if they had been primarily responsible for it prior to the pandemic, they were most likely to increase their housework performance if their partner was doing most of the housework pre-pandemic (*rrr* = 1.88; $p < .05$).. Consistent with Hypothesis 2b and a gender display/gender deviance neutralization perspective, however, fathers did less housework when they or both partners reduced their hours at work or left their jobs. Contrary to expectations based on theory, fathers

were 3.5 times more likely to do more housework relative to no change if mothers lost their job during the pandemic. The likelihood of doing more (compared to no change) was also greater when fathers out-earned their partner. Nevertheless, the findings are generally congruent with a relative resources perspective for fathers. In support of Hypotheses 3a, we find that compared to no change in housework performance, fathers were doing less housework during the pandemic when they were the primary earner (*rrr* = 4.20; $p < .05$) and more housework when their female partner was the primary earner (*rrr* = 2.93; $p < .01$).

Several factors were associated with less housework among mothers. Mothers were most likely to reduce their time in housework if they shouldered the majority of housework responsibilities pre-pandemic (*rrr* = 1.89, $p < .05$). In contrast to Hypotheses 2a and 2b and a gender perspective which suggests that mothers should be responsible for domestic labor, mothers reduced their housework if at least one partner lost a job during the pandemic. Indeed, mothers were nearly 5 times more likely to reduce time in housework if both partners lost a job compared with neither partner losing a job. Yet, consistent with Hypothesis 2b, compared to no change in housework, mothers were less likely to reduce their time in housework if fathers were working from home occasionally (*rrr* = 0.34; $p < .05$).

Results from Table 3 also show that increases in mothers' housework performance during the pandemic are associated with decreases in paid work outside the home and earnings, providing support for Hypothesis 2a and 3a. Mothers were 3.6 times more likely to be doing more housework when fathers were the sole earners in families. They were nearly twice as likely to increase their housework if they had reduced hours in paid work or left their job and 2.5 times as likely if they were working from home exclusively. Consistent with Hypothesis 4, evidence shows that mothers were also more likely to increase their time in housework in families

responsible for creating online educational content for their children (*rrr* = 1.66; $p < .05$), and supplemental analyses show that mothers appear to be primarily responsible for creating online educational content for children during the pandemic (results not shown).

----- Insert Table 3 about here -----

Results in Table 4 focus on change in time spent in childcare. Results provide strong support for Hypothesis 2a, showing that parents' time at home during the pandemic is a primary predictor of changes in childcare performance. Increases in time at home are associated with more childcare time for both mothers and fathers. Fathers were less likely to perform childcare during the pandemic when at least one parent was an essential worker. However, fathers' time in childcare increased when they reduced their hours/left their jobs (*rrr* = 2.12, $p < .05$). Reduction in fathers' paid work hours (*rrr* = 3.36, $p < .05$) are also associated with a greater likelihood that mothers reduced childcare time during the pandemic Telecommuting was also associated with change in parents' childcare performance. Fathers who worked from home exclusively (*rrr* = 2.37, $p < .01$) were doing more childcare during the pandemic. When mothers worked from home exclusively, fathers were more likely to do less childcare (*rrr* = 3.65, $p < .05$). Moreover, working at home exclusively (*rrr* = 2.94, $p < .01$) or occasionally (*rrr* = 3.71, $p < .05$) was associated with increases in childcare among mothers. The findings regarding childcare and changes in men's and women's paid work support a time availability perspective (Hypothesis 2a) even in cases of men's unemployment. Fathers performed more childcare when they lost jobs (*rrr* = 3.41, $p < .001$) during the pandemic. Moreover, fathers' job loss (*rrr* = 3.28, $p < .01$) was also associated with less childcare time among mothers during the pandemic.

----- Insert Table 4 about here -----

Family finances during the pandemic were also associated with changes in childcare, providing evidence for Hypothesis 3a. During the pandemic, men increased their childcare time when mothers were the primary earners (*rrr* = 2.62, $p < .05$). Conversely, mothers decreased their childcare time when the mother was the sole earner. Lastly, in line with Hypothesis 4, the loss of childcare and schools is also related to more time caring for children. Fathers were more likely to increase childcare (*rrr* = 2.22, $p < .01$), and mothers less likely to decrease childcare (*rrr* = 0.45, $p < .05$), if families were creating e-learning content. Mothers were 2.5 times ($p < .01$) more likely to increase their performance of childcare if children spent 21 or more hours in the care of others prior to the pandemic than if children did not spend time in the care of others.

DISCUSSION

The COVID-19 pandemic has disrupted life for nearly all Americans. For parents, challenges managing domestic responsibilities in light of job loss, telecommuting, and the closure of childcare centers and schools has raised concerns among some that 60 years of progress toward gender equality may be erased. Yet, with more men likely to be home, the pandemic may also lead to more equal sharing of domestic labor among different-sex parents. The aim of this study was to use the pandemic as a natural experiment to test key theories of gender inequality and investigate changes in US parents' time, and division of, domestic labor during the pandemic. We find evidence that the pandemic is associated with both reduced and exacerbated gender inequalities at home. Results showed that, on average, the divisions of domestic labor have become more equal, and this trend persists across a wide range of sociodemographic characteristics and is also similar when focusing solely on mothers' reports (mothers report similar magnitudes of change as reported here, with approximately a 10-15% shift from traditional divisions of domestic labor to more equal divisions of domestic labor). The

shift in greater sharing of domestic labor is largely associated with increases in fathers' time in domestic tasks, although decreases in mothers' domestic responsibilities are also associated with more equal sharing. Still, we find that mothers persistently perform more housework and at least as much (if not more) childcare than fathers. Additionally, mothers' burdens have increased in families where they were doing most of domestic labor both before and during the pandemic.

Results of this study provide mixed evidence to support theoretical perspectives on the gendered division of labor in families. Consistent with a time availability and relative resources perspective, parents did more domestic labor during the pandemic when they spent more time at home and when they earned less than their partner. Time at home as indicated by employment status, job loss, and telecommuting were associated with increases in parents' performance of domestic labor during the pandemic, especially childcare. Increases in men's domestic duties and the growth of egalitarian sharing, therefore, appear to be the result of the substantial number of fathers at home during the pandemic – 57% of fathers were either unemployed, had reduced work hours, left jobs, or worked from home exclusively.

Change in both mothers' and fathers' domestic duties was also associated with their relative earnings. When fathers were the sole or primary earners, they did less housework, and mothers did more, during the pandemic. In contrast, when mothers were the sole or primary earners – which was the case in nearly 30% of families - the likelihood that they would be doing less childcare increased substantially, while the likelihood that men would do more housework and childcare increased. Importantly, the proportion of mothers earning more than their partners did not change as the pandemic unfolded. It appears perhaps that mothers were able to leverage their bargaining position to extract greater domestic participation from their partners as domestic demands increased during the pandemic.

Although many findings regarding changes in fathers' domestic performance are consistent with a time availability and relative resources perspective, some changes in fathers' and mothers' domestic labor support a gender perspective. First, though time at home is positively associated with changes in father's time in childcare, results showed that fathers who reduced their work hours were doing less housework during the pandemic. Second, the results showed that mothers bore the brunt of homeschooling needs and reduction in childcare supports. Consistent with a gender perspective, as well as autonomy theory, in families that sent children to daycare more than 20 hours per week before the pandemic, mothers, but not fathers, increased their childcare duties during the pandemic. Among the 48% of homeschooling families that created educational content, mothers increased their time in housework and were less likely to decrease time in childcare. Homeschooling, nonetheless, was also associated with increases in fathers' childcare performance, suggesting that hegemonic gender norms did not fully dictate who responded to increased demand for domestic labor.

Several other findings run counter to expectations based on theory. For example, fathers increased their housework performance, and mothers decreased their own, when mothers reported losing a job during the pandemic.[7] Relatedly, men who are primary earners were more likely to increase their housework performance than those sharing earning responsibilities with their partners. This last finding, however, may be a function of the fact that conventional couples were more poised to see an increase in fathers' housework performance than those that were already egalitarian. Why men increased their housework following their partners' job loss is a question that requires further exploration beyond the scope of this study. Nonetheless, these

[7] These findings persist in models restricted to mothers' reports only.

findings are central to understanding how growing gender inequalities in paid work during the pandemic have not necessarily resulted in growing inequalities in domestic labor.

Findings that more time at home for men during the pandemic is associated with more childcare responsibilities and a more egalitarian sharing of childcare tasks is consistent with recent research on paternity leave and job flexibility (Bünning 2015; Carlson, Petts, and Pepin 2020; Holmes et al. 2020; Lyttleton, Zang, and Musick 2020; Petts and Knoester 2018). Importantly, results from this study suggest that the association between time at home and increased time in, and sharing of, domestic labor is not due solely to involved fathers choosing to be home, as the pandemic thrust many fathers into the home via job loss or stay-at-home orders. Despite what theories of gender display or gender deviance neutralization might predict (Bittman et al. 2000; Brines 1994; Greenstein 2000), these findings show that when circumstances dictated, fathers embraced domestic responsibilities regardless of their predispositions (Risman 1987). Indeed, aside from predicting a decrease in childcare time among mothers, gender ideologies were not predictive of changes in parents' domestic labor and these shifts were not solely based on fathers' own (mis)perceptions of how their involvement in domestic labor increased. As Knoester and colleagues (2007) have argued, the exposure of fathers to domestic responsibilities alters fathers' perspectives regarding their family roles and leads them to re-evaluate their values and priorities. This suggests that changes in fathers' performance of domestic labor may persist long after the pandemic.

Though a new normal of more egalitarian sharing appears possible in the post-pandemic world, there are also signs that domestic gender inequalities remain firmly entrenched. Despite the influx of men at home, half of families reported women doing the majority of housework during the pandemic, and more than one-third reported women doing the majority of childcare.

And, most parents report no overall change in time spent in domestic labor during the pandemic, suggesting that gender disparities that existed prior to the pandemic likely persist for many couples. This suggests that policies that allow men to be at home more (e.g., job flexibility) are insufficient to fully alleviate gender inequality in domestic labor, and that decreased employment and wage inequalities will likely also be required (Rao 2020).

This study contributes to our understanding of family life during the COVID-19 pandemic. Though like all studies, it is not without limitations. First, although results are weighted by gender, race/ethnicity, and age to be representative of US parents, and numerous additional demographics match estimates from other representative data sources, the sample is skewed toward more educated and less religious parents. The results may therefore not be generalizable to less educated and more religious parents in the US. Nevertheless, we find little evidence that the division of domestic labor or changes in parents' time in tasks during the pandemic varies by education or religious affiliation, suggesting that the results from multivariate models are unlikely biased. In fact, we find consistency in these trends across numerous demographic characteristics (Figure A1 in appendix). Moreover, our findings regarding trends in the division of domestic labor are similar to those found in one national U.S. survey[8] as well as surveys from Canada and the UK (Chung et al. 2020; Miller 2020; Shafer et al. 2020), increasing confidence in our results.

Second, time use estimates from survey questionnaires are subject to recall and social desirability bias, leading to inaccuracies. This study employed stylized questions to help reduce this bias but items like this can lead to less precise measurement of parents' time in tasks (Folbre 2020). We are therefore unable to estimate changes in minutes per day or hours per week in

[8] This survey only contains information on the division of domestic labor during the pandemic. Our study is unique in its ability to assess how the division of domestic labor changed from before the pandemic to during the pandemic.

mothers and fathers' time in housework and childcare during the pandemic or changes in the proportionate shares of domestic tasks. Despite the unavailability of time diary data, parents' perceptions of domestic (in)equalities are associated with relationship quality (Carlson, Hanson, and Fitzroy 2016; Carlson, Miller, and Rudd 2020; Carlson, Miller, and Sassler 2018; Schieman, Ruppanner, and Milkie 2018). Importantly, our findings show a greater share of parents – including mothers specifically – perceive the division of labor to be more equal than prior to the pandemic. In future analyses, we plan to evaluate whether perceptions of increased sharing are associated with increased perceptions of fairness and relationship satisfaction.

It should be noted that we also cannot definitively establish temporal order in post-pandemic changes. Although one key advantage of our study is that it includes measures on domestic and paid labor from both before and during the pandemic, we still are not able to assess precisely which changes came first. Changes in responsibilities for domestic tasks could in some instances predicate change in parents' paid work. Increases in childcare responsibilities due to school/daycare closure could plausibly lead to job loss or a reduction in work hours. We also are unable to account for the potential association between paid leave-taking and parents' division of labor, as this information is unavailable in the data. Yet, despite these limitations, this study contains important information that is unavailable in other nationally representative datasets. For example, the CPS does not contain information on housework, and the American Time Use Survey does not allow for analyses on the division of domestic labor due to lack of data on partners' behavior. Thus, this novel dataset provides important information about how the pandemic may contribute to shifts in couples' divisions of labor.

The COVID-19 pandemic has obliterated the invisible line separating work and family, and with so many already overwhelmed by the weight of work and family demands before the

pandemic, has placed even more burden at their feet. As is often the case in times of crisis, a substantial number of couples have responded to the pandemic by banding together and sharing the domestic load. As the pandemic continues, the story of how families cope may change, however. Additionally, what the domestic division of labor will look like after the pandemic has ended remains a mystery. What is clear, nonetheless, is that despite evidence that the pandemic is exacerbating gender inequality, there is also a sign of hope for gender equality at home by exposing fathers to that which may have been previously invisible, potentially altering the gendered division of labor.

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Table 1. Sociodemographic Characteristics of Sample (N = 1,025)

	Mean or Proportion	SD	Min	Max
Gender (woman = 1)	.49	-	0	1
Age	43.85	10.98	19	73
Race/Ethnicity		-		
White	.59	-	0	1
Black	.09	-	0	1
Latinx	.21	-	0	1
Asian/Other	.11	-	0	1
Education				
HS or less	.08	-	0	1
Some college	.28	-	0	1
Bachelor's degree	.40	-	0	1
Advanced degree	.24	-	0	1
Married	.89	-	0	1
Age of youngest child	9.63	6.79	1	22
Number of children	1.94	0.92	1	4
Health	2.58	0.85	1	4
Health of partner	2.64	0.87	1	4
Religious affiliation				
Catholic	.21	-	0	1
Evangelical Protestant	.18	-	0	1
Mainline Protestant	.14	-	0	1
None/agnostic	.37	-	0	1
Other	.10	-	0	1
State stay-at-home order				
Innovator	.38	-	0	1
Early adopter	.26	-	0	1
Late adopter	.33	-	0	1
Resister	.03	-	0	1

Table 2. Mean Changes in Division of Domestic Labor and Predictors

	Before COVID19		*During COVID19*		
	Mean or Proportion	SD	Mean or Proportion	SD	Difference
Division of housework					
Mother does majority	.64	-	.47	-	-0.17***
Shared equally	.27	-	.42	-	0.16***
Father does majority	.10	-	.11	-	0.01
Division of childcare					
Mother does majority	.50	-	.36	-	-0.14***
Shared equally	.45	-	.56	-	-0.11***
Father does majority	.05	-	.09	-	0.03***
Employment					
Both work FT	.35	-	.21	-	-0.14***
Father FT, Mother PT	.18	-	.14	-	-0.04*
Father PT, Mother FT/PT	.07	-	.12	-	0.05**
Father single earner	.29	-	.35	-	0.06**
Mother single earner	.06	-	.11	-	0.05***
Both unemployed	.04	-	.07	-	0.03*
Household income	4.86	1.61	4.51	1.77	-0.35***
Job loss					
Father only lost job			.08	-	
Mother only lot job			.07	-	
Both lost job			.02	-	
Neither lost job			.83	-	
Relative earnings					
Father earns more	.63	-	.58	-	-0.06***
Earning shared equally	.08	-	.13	-	0.04*
Mother earns more	.28	-	.29	-	0.01
Reduced hours/left job					
Father only reduced hours/left job			.09	-	
Mother only reduced hours/left job			.09	-	
Both reduced hours/left job			.04	-	
Neither reduced hours/left job			.78	-	
Working from home					
Father works from home exclusively	.09	-	.41	-	0.32***
Father works from home sometimes	.22	-	.12	-	-0.10***
Father does not work from home	.69	-	.47	-	-0.22***
Mother works from home exclusively	.12	-	.35	-	0.22***
Mother works from home sometimes	.14	-	.06	-	-0.08***
Mother does not work from home	.73	-	.59	-	-0.14***
Childcare hours[a]	13.58	16.74	1.21	0.28	12.37***
0 hours spent in childcare	.52		.96		0.44***
1-20 hours spent in childcare	.16		.01		-0.15***
21+ hours spent in childcare	.32		.03		-0.29***
Creates E-learning content[a]			.48	-	
Parent/partner is essential worker			.28	-	
Traditional gender attitudes			1.97	0.64	

[a]Mean/proportion is restricted to age appropriate cases; younger than 6 for childcare (N = 535) and ages 6-17 for e-learning (N = 421). In multivariate analyses, parents with children outside of these ranges are coded as 0 for these variables. Some data is missing in the before column because this information is either not available (e.g., gender attitudes), or does not apply (e.g., job loss, reduced hours)

Table 3. Multinomial Logistic Regression Results Predicting Change in Time Spent in Housework, by Parent Gender (N = 1,025)

	Fathers				Mothers			
	Doing Less		*Doing More*		*Doing Less*		*Doing More*	
Variable	*rrr*	*SE b*	*rrr*	*SE b*	*rrr*	*SE b*	*rrr*	*SE b*
Gender (female=1)	1.16	0.46	0.46***	0.11	0.90	0.27	1.38	0.39
Division of housework before pandemic								
She did majority	1.18	0.49	1.88*	0.47	1.89*	0.60	1.22	0.33
He did majority	4.60**	2.67	1.68	0.62	1.59	0.74	1.57	0.66
Employment during pandemic								
Father FT, Mother PT	0.69	0.49	0.92	0.31	0.73	0.32	1.29	0.43
Father PT, Mother FT/PT	1.21	1.00	1.90	0.78	2.18	1.21	1.38	0.67
Father single earner	4.15	3.32	0.91	0.35	0.84	0.41	3.60**	1.61
Mother single earner	1.03	0.83	1.57	0.69	1.22	0.66	0.57	0.32
Both unemployed	1.10	1.15	1.62	0.90	1.50	0.95	2.53	1.54
Job loss								
Father only lost job	2.62	1.43	1.61	0.62	2.53*	1.11	1.11	0.46
Mother only lost job	1.83	0.96	3.54***	1.20	2.66*	1.14	1.07	0.42
Both lost job	0.73	0.86	2.00	1.23	4.90*	3.43	2.24	1.44
Parent/partner is essential worker	1.75	0.73	1.34	0.35	1.65	0.52	0.81	0.24
Household income during pandemic	1.01	0.11	0.96	0.07	1.17	0.11	0.97	0.08
Relative earnings during pandemic								
Father earns more	4.20*	2.80	3.10**	1.21	1.33	0.56	1.53	0.57
Mother earns more	1.60	1.17	2.93**	1.20	1.62	0.76	1.44	0.59
Traditional gender attitudes	1.39	0.38	1.06	0.16	1.06	0.19	0.88	0.15
Reduced hours/left job								
Father only reduced hours/left job	3.27*	1.63	2.01	0.74	2.05	0.87	1.19	0.44
Mother only reduced hours/ left job	1.25	0.63	1.01	0.33	0.94	0.41	1.95*	0.60
Both reduced hours / left job	11.23**	10.12	1.79	1.13	2.13	1.24	2.90	1.89
Working from home during pandemic								
Father works from home exclusively	1.05	0.51	1.41	0.40	0.91	0.32	0.62	0.17
Father works from home sometimes	0.43	0.24	0.87	0.33	0.34*	0.18	0.65	0.22
Mother works from home exclusively	1.49	0.90	1.19	0.38	0.85	0.32	2.39*	0.92
Mother works from home sometimes	0.87	0.90	0.81	0.40	0.81	0.46	2.32	1.17
Childcare hours before pandemic								
1-20 hours	0.89	0.71	1.49	0.52	1.37	0.68	1.05	0.41
21+ hours	0.80	0.41	0.99	0.30	0.90	0.37	1.59	0.47
Creates E-learning content	1.09	0.50	1.10	0.26	1.55	0.44	1.66*	0.41

*p < .05. **p < .01. ***p < .001; Comparison group is no change. All control variables are included in models but not shown here to conserve space.

Table 4. Multinomial Logistic Regression Results Predicting Change in Time Spent in Childcare, by Parent Gender (N = 956)

	Fathers				Mothers			
	Doing Less		*Doing More*		*Doing Less*		*Doing More*	
Variable	*rrr*	*SE b*	*rrr*	*SE b*	*rrr*	*SE b*	*rrr*	*SE b*
Gender (female=1)	2.59*	1.05	0.51***	0.13	2.48*	0.91	1.55	0.42
Division of childcare before pandemic								
She did majority	1.10	0.51	1.62	0.41	1.65	0.65	0.79	0.21
He did majority	2.23	1.31	0.87	0.35	1.92	1.11	1.36	0.51
Employment during pandemic								
Father FT, Mother PT	0.65	0.39	1.51	0.53	0.67	0.37	1.19	0.40
Father PT, Mother FT/PT	0.95	0.72	1.14	0.51	1.00	0.73	0.99	0.48
Father single earner	2.36	1.66	1.17	0.47	1.21	0.73	2.72	1.41
Mother single earner	0.55	0.43	1.50	0.69	5.53**	3.66	1.75	0.86
Both unemployed	0.98	0.91	1.69	0.98	1.26	1.09	2.10	1.43
Job loss								
Father only lost job	1.12	1.02	3.41***	1.28	3.28**	1.42	0.58	0.28
Mother only lost job	1.20	0.70	0.84	0.33	2.01	1.15	1.21	0.40
Both lost job	1.95	2.88	3.56	2.66	2.27	1.90	2.17	1.59
Parent/partner is essential worker	2.50*	1.07	0.99	0.27	1.74	0.69	1.16	0.33
Household income during pandemic	1.08	0.16	0.94	0.07	1.28*	0.13	0.94	0.07
Relative earnings during pandemic								
Father earns more	1.02	0.59	1.56	0.55	0.56	0.25	1.29	0.49
Mother earns more	1.91	1.20	2.62*	0.98	1.02	0.50	1.76	0.72
Traditional gender attitudes	1.20	0.35	1.05	0.15	1.90**	0.44	1.19	0.19
Reduced hours/left job								
Father only reduced hours/left job	1.08	0.66	2.12*	0.79	3.36*	1.65	1.75	0.64
Mother only reduced hours/ left job	1.33	0.79	0.93	0.32	0.96	0.53	0.93	0.28
Both reduced hours / left job	2.37	2.70	1.13	0.60	2.82	1.98	1.00	0.59
Working from home during pandemic								
Father works from home exclusively	0.44	0.21	2.37**	0.69	1.98	0.81	1.09	0.31
Father works from home sometimes	0.55	0.29	0.96	0.37	1.33	0.64	0.69	0.24
Mother works from home exclusively	3.65*	2.29	1.10	0.37	0.70	0.34	2.94**	1.23
Mother works from home sometimes	1.08	1.15	1.95	0.90	1.38	0.86	3.71*	1.96
Childcare hours before pandemic								
1-20 hours	0.68	0.57	1.70	0.61	0.88	0.56	1.39	0.53
21+ hours	0.52	0.27	1.29	0.38	1.86	0.89	2.48**	0.73
Creates E-learning content	0.42	0.19	2.22**	0.58	0.45*	0.16	1.38	0.36

*$p < .05$. **$p < .01$. ***$p < .001$; Comparison group is shared equally. All control variables are included in models but not shown here to conserve space.

Figure 1. Distribution of change in parents' domestic labor

% of parents who say they are _____ housework and childcare about 1 month after COVID-19 restrictions

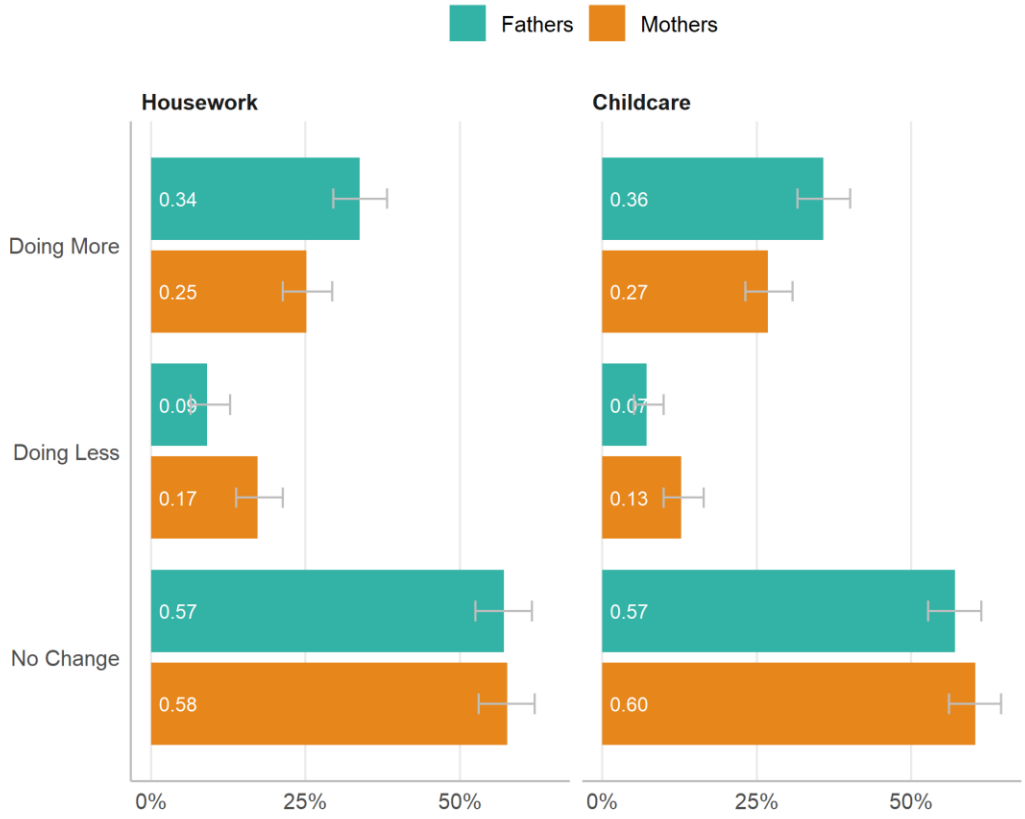

Figure 2. Division of domestic labor during the pandemic by parents' time in housework and childcare

% of parents who say they are _____ housework and childcare about 1 month after COVID-19 restrictions