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## Household Impacts of Child Health Shocks

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## **Abstract**

Women bear a disproportionate share of the unpaid labor within a household, which contributes to gender gaps in life and relationship satisfaction. This paper examines how an exogenous shock that increases workload within the household impacts the burden of unpaid labor. By exploiting a rich longitudinal dataset from Australia, I estimate the gendered impacts to parental workload and stress, life and relationship satisfaction, and household division of labor when parents have a child with a significant health shock. I find evidence that women experience a decrease in their satisfaction with parenting and their life and relationship satisfaction, and these results are most pronounced for households where the mother is less active in the labor market or less educated. Point estimates indicate that men may not experience the same negative effects.

# 1 Introduction

Women shoulder a disproportionate amount of the unpaid labor within a household, even when only considering dual-earner households (Hwang, Lee, and Lee 2019) or households where women out earn their male counterparts (Bertrand, Kamenica, and Pan 2015). From a policy perspective, this has very consequential impacts on women. The gender gap in unpaid labor is an important factor in the gender wage gap (Hersch and Stratton 1997; 2002), the gap in life and relationship satisfaction (Amato et al. 2003), and even for marriage stability (Frisco and Williams 2003; Dew and Wilcox 2011; Álvarez and Miles-Touya 2015).

Standard explanations for the differential in unpaid housework include preferences, abilities, bargaining power, or social norms. However, these explanations fall short when considering neoclassical economic theory. According to economic theory, individuals entering into marriage should have enough information about their potential partner to secure a stable match. If preferences, abilities, bargaining power, or social norms explained the division of household production, we would not expect to see impacts to marriage stability as a result of uneven distribution of household work, since that information should have been available prior to choosing their partner. This paper investigates the role that household shocks may play in determining the division of unpaid labor and the resulting impacts to household satisfaction. When a household shock increases the work within a household, how is the increased burden divided between the partners? Do the impacts of the shock vary by gender?

More than 8% of youth and children are impacted by chronic health conditions and disabilities as of 2010 (Perrin, Anderson, and Van Cleave 2014). These afflictions are often unforeseen, and therefore, provide a plausible exogenous shock within a household. Though the degree to which these shocks impact everyday life can vary greatly with the severity of

the condition, a child health shock (CHS) is very likely to increase the workload within a household. Using this shock, I investigate the heterogeneous effects across the genders, timing of the shock, and types of households to examine how the increased workload and stress of the workload is shared within the household. Specifically, I investigate how a CHS impacts individuals' perceptions on the difficulty of parenting, life satisfaction, satisfaction with their household relationships, and perceived division of housework and parenting work within the household.

The Household, Income and Labour Dynamics in Australia (HILDA), a longitudinal survey that spans nearly two decades, asks comprehensive questions on various aspects of family life. Importantly, the survey asks households to identify any member within household that has a long-term disability or chronic illness. I use this variable to identify the parents of children who experience a major negative health shock. To estimate how these shocks impact household dynamics, I utilize parent responses to questions about the division of parental and household duties between partners, and a variety of questions regarding spousal and parental satisfaction.

To determine how couples respond to the shock of having a child with a severe negative health condition, I use two different approaches. First, assuming exogeneity of the shock, I use the cross-sectional variation across couples in child health status. Next, exploiting the panel design of the survey, I use a couple fixed effects model and the same sample to examine the changes within- couple when faced with a CHS. First, results indicate negative impacts on mothers' attitudes toward parenting. Specifically, mothers tend to believe that parenting is harder than they anticipated, feel more exhausted by parenting, and feel more trapped by their parental responsibilities when they have a child with a negative health shock. However, point estimates indicate that men do not necessarily feel these same impacts.

Second, there is also evidence that having a child with a negative health shock decreases life satisfaction and relationship satisfaction for women. However, point estimates for men, though imprecise, indicate that fathers may not experience these same drops in satisfaction. Last, I investigate how couples feel about the relative share of parenting work and household work. Regardless of CHS status, women overwhelmingly feel they do more than their fair share of the parenting and housework, with more than 60% feeling they do more than their fair share. Child health shocks do not appear to change the inequality in the division of parenting duties between men and women. Furthermore, the negative household impacts to parenting and relationship satisfaction are most pronounced for women in families where the woman is less educated or less active in the labor market prior to the health shock. Overall, these results tend to support the notion that women may bear more of the burden, even after controlling for labor force participation, when a household is faced with a child health shock.

This paper contributes to the literature in two distinct ways. First, it is the first paper to directly study how a severe child health shock impacts the household division of labor. Previous research has found that women tend to experience a drop in labor market participation and a decrease in human capital accumulation when they have a child with a negative health shock (Powers 2001; 2003; Burton et al. 2017; Gunnstiensson and Steingrimsdottir 2019). Through these results, researchers have inferred a greater degree of specialization within the household since women are observed to spend less time in the labor force, although the impacts on household division of labor have not been studied directly. This paper directly studies the impact of child health shocks on parenting difficulty and the division of house and parenting work *conditional* on changes in labor market participation.

Second, it is the first paper to directly study changes in marital satisfaction and how these changes differ by gender when a household is faced with a child health shock. The results of previous research on the effects of childhood disability or illness on parental divorce or separation have been varied, with some researchers finding no change or a decrease in divorce (Reichman et al. 2008; Tøssebro and Wendelborg 2017) and others finding higher rates of divorce (Loft 2011; Kvist, Nielsen, and Simonsen 2013; Reichman, Corman, and Noonan 2004; Gunnstiensson and Steingrimsdottir 2019). Because of increased stress and potential shifting of parental and household responsibilities, a child health shock could increase dissatisfaction with one's spouse which could ultimately lead to divorce. However, it is worth noting that because of the added stress and sometimes expenses of an ill or disabled child, parents may feel trapped in their relationship despite high levels of spousal dissatisfaction, causing individuals to remain married when they otherwise would have terminated the marriage. Importantly, previous work on divorce was only able to observe the ultimate termination of the relationship, but divorce can occur because of dissatisfaction on the part of one or both members of the couple. By looking at relationship satisfaction, I am able to determine how changes in satisfaction differ by gender when a household is faced with a significant child health shock.

## 2 Literature

Having a child diagnosed with a long-term health disability or chronic health condition can impact many areas of a parent's life. Because of the extra needs of their child, it is possible that this could impact not only parents' formal employment but also affect their household division of labor and intrahousehold relationships.

Though researchers across disciplines have investigated how child health impacts parents' lives, it has mainly been economics researchers that have focused on the impact child health

has on parents' labor supply. Results show that women's careers are disproportionately impacted, with women more likely to leave the labor force (Gould 2004; Kimmel 1998; Powers 2003; Burton et al. 2017) and decrease their number of hours worked (Gould 2004; Powers 2001; 2003; Burton et al. 2017; Kvist, Nielsen, and Simonsen 2013). Researchers assume this is largely due to households specializing in tasks, with couples simply reverting to historical gender roles (Burton et al. 2017). Additionally, evidence supports heterogeneous effects depending on marital status, severity of the disability/health shock, and socioeconomic status (Corcnan, Noonan, and Reichman 2005; Baydar et al. 2007; Powers 2003; Breslau, Salkever, and Staruch 1982). Though women face the brunt of the impact, there is evidence that both partner's long-term earnings may be negatively impacted when they have a child with a disability (Gunnstiensson and Steingrimsdottir 2019).

Though researchers have investigated the impacts to formal labor supply, to my knowledge, there has not been any direct research into how this shock to households affects intrahousehold labor roles nor how this shift changes attitudes on familial roles or satisfaction with relationships. The general disparity between the genders for intrahousehold division of labor in the absence of a child health shock has been fairly well documented. On average, women perform more of the housework tasks even when limiting the sample to dual-earner households (Sevilla-Sanz, Gimenez-Nadal, and Fernández 2010; García-Mainar, Molina, and Montuenga 2011; Hwang, Lee, and Lee 2019). Since child health shocks have been shown to push mothers out of the labor force, it is important to consider how those changes in formal labor supply impact the division of work within the household. Using longitudinal datasets, recent work has found that increases in nonworking time increases couples' housework time, but women tend to be more responsive than men (Gough and Killewald 2011; Foster et al. 2018). Research has used job terminations or promotions when looking at how nonworking time impacts gender disparities in the home,

but less is known about how the gender disparity may change when parents voluntarily adjust their labor supply in response to their children's health which may be simultaneously changing the amount of housework and childcare needed within the household.

From a policy perspective, it is important to have a clear understanding of how child health shocks impact not only formal labor supply, but also intrahousehold work division. The gender gap in household division of labor contributes to the wage differential between men and women (Hersch and Stratton 1997; 2002; Maani and Cruickshank 2010; Bryan and Sevilla-Sanz 2011). In addition, it has been shown to decrease marital and life satisfaction (Amato et al. 2003; Dew and Wilcox 2011; Álvarez and Miles-Touya 2015) as well as relationship stability (Frisco and Williams 2003).

In addition to changing labor supply and intrahousehold division of housework, having a child with serious health issues could also impact families through its effect on family structure. The research on how child health may impact divorce rates is vast, yet the majority of the work has been plagued by non-representative or small samples (Hartley et al. 2010; Lederman et al. 2015; Reichman, Corman, and Noonan 2004). In addition, most research on this subject has not had the benefit of longitudinal data which can help assuage fears that child health shocks may be correlated with certain types of unobservable characteristics within families. Because of this concern, I focus mainly on research that has had the benefit of longitudinal data. Evidence on this subject is more mixed and spans multiple fields.

Reichman et al. (2008) argue that marriage provides a certain insurance for families that have a disabled child and can actually decrease divorce rates. These results are supported by a recent study of families raising a child with disabilities in Norway that found slightly lower relationship termination rates (Tøssebro and Wendelborg 2017). In slight contrast,



research using longitudinal data from Wisconsin found no differences in divorce rates when contrasting parents who had a child with a developmental disability and a comparison group of parents without a child with a developmental disability (Seltzer et al. 2001).

Yet, most other recent research has found that severe child health shocks or child disability leads to increased divorce rates for parents (Loft 2011; Gunnstiensson and Steingrimsdottir 2019; Kvist, Nielsen, and Simonsen 2013; Reichman, Corman, and Noonan 2004). Having a child with a disability increases financial and emotional strain on parents. The increased attention required by the child experiencing the CHS may take away time and energy otherwise devoted to other household relationships. Eventually, the theorized strain on the relationships may result in increased divorce rates among these parents. Many earlier papers have been plagued by small sample sizes and short time horizons. Two of these more recent studies that found increased divorce rates (Loft 2011; Gunnstiensson and Steingrimsdottir 2019) have had the benefit of a large longitudinal dataset from Denmark, yet Denmark is known for having one of the most liberal welfare systems in the world. As such, it is feasible that other countries with less generous public support systems may encounter different outcomes in terms of partnership dissolution.

On top of the active debate on the differential rate of partnership termination, research on the impacts to marital satisfaction and adjustment is far sparser. In one study, parents of 275 children with craniofacial anomalies were surveyed regarding their prenatal and postnatal marital stability. When compared to a control group, the authors found mixed results regarding the relative marital stability (St John et al. 2003). Another study of 67 families found that the factors that differentiate a successful marriage adjustment of parents of children with disabilities are the same as those exhibited in successful marriage adjustments of those without a child with disabilities (Gavidia-Payne and Stoneman 2006).

It is important to note, that both of these studies focused on relatively small samples that were not nationally representative. In addition, the researchers were unable to observe families before and after the child health shock occurred, and their results rely on the assumption that health shocks are completely exogenous.

## 3 Data and Methods

### 3.1 Analysis Sample

This analysis uses the Household, Income, and Labor Dynamics in Australia (HILDA) survey data for the years 2001-2017. The HILDA survey is a large national probability sample of households occupying private dwellings and follows more than 17,000 individuals each year, creating a balanced panel of initial respondents, with additional respondents added due to changes in family composition and others added on account of attrition from the original sample<sup>1</sup>. Individuals from across Australia are interviewed about nearly all facets of their lives, with special attention paid to family and household formation, income, and work. Of particular interest for this paper are the questions surrounding attitudes toward parenting, relationship satisfaction, and the division of household labor.

My main analysis sample includes heterosexual couples who were married or cohabitating when the female had her first child, have at least one child under 18 living in their household, and the female is between the ages of 20-55<sup>2</sup>. Couples are included in the sample as long

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<sup>1</sup> If a HILDA participant moves in with or marries a partner and has a child, the other parent of that child then becomes part of the core sample and is followed from that point forward. In wave 11, 2,153 households were added to the HILDA sample to replace those who had fallen out of the sample or deceased. These individuals have been followed since in the same fashion as the original group. For the purpose of this research, if any of these individuals meet the sample criteria outlined, they are included in the analysis irrespective of whether they were part of the original HILDA sample.

<sup>2</sup> Couples are excluded if either individual is missing responses for any of the outcome variables.

as the female is under the age of 55, they have at least one child under the age of 18 in their household, and they remain partnered. Years in which couples report having foster children or grandchildren in their household are excluded from the sample<sup>3</sup>.

The decision to follow only coupled individuals was made for two primary reasons. First, to analyze partnership satisfaction, the individuals must be together. In addition, when individuals separate, one parent usually assumes primary custody, and in the case of families with a disabled or chronically ill child, it is far more likely to be the mother who assumes custody (Cohen and Petrescu-Prahova 2006). Though it is possible to follow both parents of the children with the survey data, only a fraction of the parents who no longer have their children living in their household answer the parenting survey questions. Since only a relatively small fraction of non-custodial parents answer parenting questions, including unpartnered couples would create a selection issue into the parenting outcome variables.

The independent variable of interest relates to whether the household has any child that has a serious health condition. The household section of the survey asks if any member of the household “has a long-term health disability/chronic health condition”. Households are told that the individual must meet certain qualifications in order to answer “yes” for this question. Specifically, the individual must have a disability or health condition that has lasted or is likely to last 6 months or more, restricts everyday activity, and cannot be corrected with medication or medical aids. Examples include conditions that limit physical activities, brain damage, mental illness that requires supervision, asthma, speech problems, hearing problems, or sight problems that cannot be corrected with glasses<sup>4</sup>. Since this

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<sup>3</sup> The exclusion of individuals who report living with foster or grandchildren removes 164 observations from the sample which includes 17 individuals that are completely removed from the analysis.

<sup>4</sup> Examples of conditions listed for the household include sight problems not corrected by glasses or contact lenses; hearing problems; speech problems; blackouts, fits or loss of consciousness; difficulty learning or understanding things; limited use of arms or fingers; difficulty gripping things; limited use of feet or legs; a

question is asked for each member of the household, it is used to flag children within the household that have been designated as having such a condition. Though the data does not list the particular ailment that the child suffers from, it does indicate which child within the household has the disability or chronic illness, allowing the researcher to observe certain characteristics of that child. As this question is asked in each wave, it is possible for a child’s health status to change from year to year, depending on their current condition. For simplicity, this paper uses the term Child Health Shock (CHS) to refer to any household that has at least one child that has a “long term disability/chronic health condition.” In the main analysis, the health status will be treated as an indicator variable that only takes a value of one for the waves in which the household deems a child or multiple children to be suffering from a long-term disability or chronic health condition.

It has been noted that there is a degree of endogeneity when it comes to labor force participation and child disability reporting, with women more likely to overstate the severity of their child’s condition to potentially justify their labor force decisions (Powers 2001). However, like Burton et al (2017), the survey used in this paper asks only if the child meets a specific set of criteria and does not ask the parent to subjectively rate the severity of the condition. As such, this risk of endogeneity is considerably lower for this analysis.

Figure 1 summarizes the maximum continuous duration of a CHS for households. About 55% of households that experience a CHS only experience that CHS for one year. Figure 2 summarizes the ages of children when they are first observed to have a CHS in the data.

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nervous or emotional condition which requires treatment; any condition that restricts physical activity or physical work; any disfigurement or deformity; any mental illness which requires help or supervision; shortness of breath or difficulty breathing; chronic or recurring pain; long-term effects as a result of a head injury, stroke or other brain damage; a long-term condition or ailment which is still restrictive even though it is being treated or medication is being taken for it; any other long-term condition such as arthritis, asthma, heart disease, Alzheimer’s disease, dementia, etc.

For households where multiple children have a CHS or one child switches in and out of CHS status, the youngest age is reported. The majority of CHS are diagnosed at relatively young ages.

It is important to consider how couples with and without children with a CHS may differ. Table 1 presents these summary statistics for individuals within the sample according to whether the couple ever reports having a CHS within their household. Column 1 presents summary statistics for couples who report having a CHS within their household at some point in time. Column 2 presents summary statistics for couples who never report having a child with a CHS, and Column 3 presents the T-test of the difference between the first two columns.

Partners who report having a CHS within their household are slightly more likely to be married before the birth of their first child, and women in those couples tend to begin their families earlier. Additionally, they tend to have more children. This is to be expected as having more children increases your likelihood of at least one child having a CHS. Both members of couples who report having a CHS tend to be slightly less educated than their counterparts, with approximately 80.2% of CHS fathers versus 83.1% of non-CHS fathers having completed at least year 12 of school. The results are consistent, if not more pronounced, at higher levels of education as well, with 25.5% of CHS fathers versus 30.7% of non-CHS fathers having a four-year college degree. The education disparity is also found between females (73.4% vs 80.4% for completing at least year 12 of school and 30.5% vs. 35.8% for a college degree). These educational statistics for women are consistent with the literature finding negative impacts to women's human capital accumulation when faced with a CHS (Powers 2001, Burton et al. 2007, Gunnsteinsson & Steingrimsdottir 2019). There does not appear to be any statistical difference between the groups in the proportion

who claim indigenous status, but individuals who at some point report a CHS are more likely to be born in Australia than their counterparts.

### 3.2 Outcome Variables

There are three main groups of outcome variables. The first group of outcome variables relates to parenting attitudes. The HILDA survey does not ask directly about the time spent parenting, but it does ask about parents' perceptions of parenting work. The survey asks how strongly parents of children under 18 agree with the following statements:

- Being a parent is harder than I thought it would be
- I often feel tired, worn out or exhausted from meeting the needs of my children
- I feel trapped by my responsibilities as a parent
- I find that taking care of my children is much more work than pleasure

Parents must answer according to a seven-point Likert scale where a value of one means the individual strongly disagrees and a value of seven means the individual strongly agrees. Though not a direct measurement of time spent parenting, the outcomes capture parents' perceptions on the current difficulty and stress of parenting.

The second group of outcomes concerns life and relationship satisfaction. The HILDA survey asks participants an array of questions about satisfaction, including how satisfied the individual is with their overall life, how satisfied they are with their spouse/partner, how satisfied they are with the relationship they have with their child(ren), and how satisfied they are with their spouse's/partner's relationship with their child(ren). These Likert scale questions are based on a 0-10 scale with zero indicating the individual is completely unsatisfied and ten indicating complete satisfaction.

The third group of outcome variables relate to the division of labor within the household. Namely, the survey asks how equitable each partner feels the division of housework and parenting work is within their household. The first questions ask whether the individual thinks they do their fair share of the housework and the second question asks if the individual thinks they do their fair share of looking after the children. These questions are again based on Likert scales, where a value of one indicates that the individual feels they do much more than their fair share, a value of three indicates that they feel they do their fair share, and a value of five indicates that they feel they do much less than their fair share.

Table 2 summarizes the main outcome variables based on an individual's sex and their CHS status. The first two columns show the average outcome values for men depending on their CHS status, and column 3 shows the statistical significance of the differences of these means. The analogous statistics are presented for women in columns 4-6. In general, both men and women tend to have more negative views on parenting when they have a child with a CHS. Additionally, men and women tend to be less satisfied with their life overall and their relationships when they have a child with a CHS. There does not appear to be any statistical difference for men depending on whether or not they have a CHS within their household with respect to the division of parenting work, but there is some evidence that women may be more likely to feel they do more than their fair share of parenting work when the household faces a CHS. The summary statistics indicate that there does not appear to be a change in the relative amount of housework that men and women undertake when a household suffers a CHS. However, it does bear noting that women have a noticeably higher average for both of these outcomes, indicating that they are far more likely to feel that they are doing more than their fair share of parenting and housework regardless of the health status of their children.

### 3.3 Methods

To analyze the household impacts of a CHS on parents, I estimate models with and without couple fixed effects. The models *without* couple fixed-effects compare across families with and without a CHS, under the assumption that this variation is exogenous. Taking advantage of the panel nature of the data, I also estimate the model with couple fixed effects evaluating within-couple changes when a CHS occurs.

#### 3.3.1 Regression Model

The OLS specification is:

$$(1) \quad y_{ict} = \beta_0 + \beta_1 CHS_{ct} + \beta_2(CHS_{ct} X male_i) + male_i + \alpha X_{ct} + \varepsilon_{ict}$$

where outcome variables,  $y_{icst}$ , include satisfaction with parenting outcomes, relationship satisfaction outcomes, and share of parenting work and housework for an individual,  $i$ , in couple,  $c$ , in year,  $t$ .

The coefficients of interest are  $\beta_1$  and  $\beta_2$ . The variable  $CHS_{ct}$  is an indicator variable that takes a value of one if the individual has a child in their household that has a “long-term disability/chronic health condition” in that year. The variable  $CHS_{ct} X male_i$  is the interaction of  $CHS_{ct}$  and an indicator for whether the individual is male<sup>5</sup>.

The vector  $X_{ct}$  contains a rich set of controls including education, age, duration of the spousal relationship, labor force status, the number of hours worked on average each week, and total yearly income for both the husband and the wife in the partnership. Quadratics for age and duration of the spousal relationship are also included. The vector also contains

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<sup>5</sup> Including lagged effects of the variables of interest was pursued, but there was no evidence of lagged effects on the outcome variables.



controls for household income, household income squared, an indicator for home ownership, marital status, total non-resident children, and the ages of all resident children by tracking the number of children within each of 5 age bins, 0-2 years, 3-5 years, 6-10 years, 11-14 years, and 15-17 years. I also include a variety of time-invariant couple-level controls, such as characteristics of the husband's and wife's country of birth, citizenship, parental education, parental occupation, and parental relationship stability. The specification also includes state-by-year fixed effects to control for any changes in state policies or state economic conditions. It should be noted that all controls vary only at a couple level (e.g. wife's age, husband's age, etc.).

Equation (1) is estimated using two approaches: ordered logit<sup>6</sup> and OLS<sup>7</sup>. Since the outcome variables of interest are Likert scale questions and, therefore, inherently ordered, it is appropriate to employ an ordered logit modelling framework. Ordinary Least Squares estimates, however, support the Ferrer-i-Carbonell and Frijters (2004) result that assuming cardinality instead of ordinality makes little difference when analyzing happiness or satisfaction scales as outcomes. All regressions are run with standard errors clustered at the couple level.

Because of the panel nature of the data couple-level fixed effects can be added to Equation (1)<sup>8</sup>:

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<sup>6</sup> Converting outcome variables to binary outcomes resulted in a loss of too much variation. Results available upon request.

<sup>7</sup> There is debate over whether outcomes that are Likert scale questions should be treated as cardinal or ordinal values within a regression. Ferrer-i-Carbonell and Frijters (2004) find the cardinality assumption is reasonable for happiness measures. Additionally, empirical results are not sensitive to relaxing the cardinality assumption in favor of ordinality. Additionally, converting outcome variables to dichotomous outcomes was also investigated, but this eliminated too much of the variation for the majority of the outcomes.

<sup>8</sup> Alternate specifications were considered including an ordered logit specification. However, because of inconsistent estimation when high-ordered fixed effects are included, this paper prefers the linear specification.

$$(2) \quad y_{ict} = \beta_0 + \beta_1 CHS_{ct} + \beta_2 CHS_{ct} X_{male_i} + male_i + \alpha X_{ct} + \sum_c \theta_c * couple_c \\ + \sum_c \varphi_c * couple_c * male_i + \varepsilon_{ict}$$

The coefficients of interest remain  $\beta_1$  and  $\beta_2$ <sup>9</sup>. The controls remain largely consistent with Equation (1), but time-invariant controls are omitted. Again, all controls only vary at the couple-level. This specification includes couple and couple-by-male fixed effects<sup>10</sup> ( $\sum_c \theta_c * couple_c + \sum_c \varphi_c * couple_c * male_i$ ). All regressions are run with clustered standard errors at the couple level.

### 3.3.2 Heterogeneity

It is almost certain that more severe health shocks would impact parents differently from more mild health shocks. While the data does not allow the researcher to observe the specific type of health shock or severity of the health shock for the child, the researcher can, of course, observe the amount of continuous time that a parent has a child with a CHS. Though an imperfect measure, health shock duration is used as a proxy for severity of the shock. In an alternate specification, I allow the effect of having a child with a severe negative health shock to have differential impacts depending on the continuous duration the CHS is observed to last by using the following specification:

$$(3) \quad y_{ict} = \beta_0 + \beta_1 (CHS_{ShortDuration_{ct}}) + \beta_2 (CHS_{LongDuration_{ct}}) \\ + \beta_3 (CHS_{ShortDuration_{ct}} X_{male_i}) + \beta_4 (CHS_{LongDuration_{ct}} X_{male_i}) \\ + \beta_5 male_i + \alpha X_{ct} + \sum_c \theta_c * couple_c + \sum_c \varphi_c * couple_c * male_i + \varepsilon_{ict}$$

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<sup>9</sup> Including lagged effects of the variables of interest was pursued, but there was no evidence of lagged effects on the outcome variables.

<sup>10</sup> A couple fixed effects model is used to reinforce the fact that all right-hand side variables are at the couple-level. Mathematically, this equation is equivalent to an individual fixed effects model.

where I divide those impacted by a health shock into those where the continuous duration of a health shock is observed to be less than two years ( $CHS_{ShortDuration_{ct}}$ ) or two years or more ( $CHS_{LongDuration_{ct}}$ ).

Likewise, it is quite probable that a child health shock may impact individuals differently depending on the age at which their child is diagnosed. For example, a younger child may require more care from their parents or may indicate a more serious or life-long disability. Alternatively, parents with children diagnosed young may feel less of a shock to their lifestyles if that is the only form of parenting that they have ever known. Fortunately, it is possible to observe which child is being designated as having a negative health shock and that child's age. Therefore, Equation (3) is modified to allow differential impacts according to the age at which a child is first diagnosed. A child is classified as being diagnosed younger if they are diagnosed when they are less than 7 years old.

## 4 Results

### 4.1 Pooled Cross-Section Results

Coefficients for the ordered logit estimation reported in Table 3 indicate that a CHS increases the difficulty and stress of parenting. Though the coefficients for the interaction term are not statistically different from zero, the point estimates do indicate that they may not face as large of an impact as their female counterparts.

Previous research has shown that the health status of children negatively impacts the labor supply of women (Powers 2001, Burton et al. 2007, Gunnsteinsson & Steingrimsdottir 2019). Therefore, I run the logistic regression without any labor controls<sup>11</sup> to see the extent to

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<sup>11</sup> Labor controls include household income as well as income, labor force status, and usual weekly hours worked for both the husband and wife in the couple.

which controlling for any labor changes may be driving these results. Panel B of Table 3 present these results for the parenting outcomes. Interestingly, the point estimates across all outcomes are insensitive to this change in controls, indicating that any shifts in women’s labor supply do not impact the degree to which parenting becomes more difficult when a household faces a CHS. Additionally, in results available upon request, the same specification was estimated using more rigorous labor controls<sup>12</sup>, but the point estimates remained relatively unchanged. Though somewhat surprising, the insensitivity to labor controls of these outcomes are in line with previous work surrounding analysis of life and relationship satisfaction (Lee and McKinnish 2018). Coefficient plots for the other outcomes are included in the appendix. Since the impact of the labor controls is negligible, the robustness to various labor controls is not shown for the remainder of the outcomes and specifications.

For additional context on the marginal impacts of having a child with a CHS, Figure 3 shows the predicted probabilities for each of the parenting outcomes (measured on the left axis) as well as the frequency for each of each of the responses (measured on the right axis). For all outcomes a response of “7” indicates that the individual strongly agrees with the statement while a response of “1” would indicate that the individual strongly disagrees with the statement. For the first outcome, parenting is harder than the individual thought it would be, individuals without a CHS select the value “2” is 14.8%, given all other controls are held at their means. Conversely, for families without a CHS the probability of being in the same bin is 9.6%. This means that having a CHS in your household decreases the probability of answering “2” for this question by 5.2 percentage points or 35%. On the other side of the spectrum, individuals whose children have a CHS are more likely to agree

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<sup>12</sup> A variety of approaches were used to control for labor including bucketing controls, interacting bucketed controls with marital status, and interacting polynomial controls with marital status.

to some extent with that statement than individuals without a CHS. These results remain consistent across all 4 outcomes to varying degrees.

Table 4 presents the results from estimating equation (1) using OLS. Though direct comparison of the coefficients is not possible, it is worth noting that the results are similar in sign and statistical significance to the results found in Table 3. Panel A replicates the ordered logit from Panel A of Table 3 while Panel B presents the results from the OLS estimation. Though the coefficient estimates cannot be directly compared between Panel A and Panel B, it is worth noting that the sign and significance of the estimates are very similar.

Since the outcome variables are not direct measurements of time, it is somewhat more difficult to put the magnitude of these results into context. When a household moves from having one child to having two children, parenting difficulty would be expected to rise. Indeed, using the same sample, I observe the mean responses for all four outcome variables increase substantially for women when they go from one child to two children. For the first statement, parenting is harder than anticipated, women's average responses increase by 0.218. Using the OLS estimates, the average increase in response for a woman with a CHS in her household is 0.26. This means that the increase in agreement that parenting is harder than anticipated is approximately 119% of the increase that women experience when they go from one child to two. Likewise, the increase for the other three outcomes are approximately 57%, 57%, and 103% of the increase that women experience when they go from one child to two, respectively<sup>13</sup>.

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<sup>13</sup> The average increase in response for "parenting leaves me feeling tired..." is 0.544 for mothers going from one to two children. The average increase in response for "I feel trapped by parenting responsibilities" is 0.192 for mothers going from one to two children. The average increase in response for "parenting is more work than pleasure" is 0.201 for mothers going from one to two children. Percentages were calculated by dividing the OLS coefficients by the average increases in response and multiplying by 100.

Unequitable division of household labor may also lead to decreased life and relationship satisfaction. Results in Table 5 indicate that a CHS within a household tends to decrease both life and relationship satisfaction levels for females. Specifically, it decreases her overall life satisfaction, and she is less likely to be satisfied with her relationship with her spouse, her relationships with her children, and with her spouse's relationship with their children. Conversely, it does not appear that men face the same decrease in their life and relationship satisfaction levels. However, it is worth noting that the estimates for the interaction term are only statistically significant for three of the outcomes. Once more, the OLS results are qualitatively similar to the ordered logistic results.

Figure 4 indicates that almost all individuals report life and relationship satisfaction levels of 5 or higher. For all four outcomes, it is less probable that individuals with no CHS report lower values of life and relationship satisfaction (values 5 through 8), and they are more likely to report the higher values (values 9 and 10) when compared to their counterparts that face such a shock.

For context as to the magnitude of these results, I again focus on the OLS estimates. The difference in average life satisfaction between those that are observed to be partnered in the following year minus those who are observed to be unpartnered in the following year for women in this sample of is approximately 0.57, which means the drop in life satisfaction due to a child health shock is approximately 37.6% ( $0.215/0.572$ ) of the average drop that is observed in the lead up to a separation. The commensurate drop in relationship satisfaction for women is on average 2.01. This implies that the impact of a CHS on women is equivalent to approximately 6.2% ( $0.124/2.008$ ) of the average drop that is observed in the lead up to a separation.

Table 6 presents the results for an individual's perceptions of their share of the parenting and housework. Again, though it is difficult to compare magnitudes of the results, both the ordered logit (Panel A) and OLS (Panel B) results present a similar story. Women are far more likely to believe that they are doing more than their fair share of the parenting and housework in the absence of a CHS, and it does not appear that there is a considerable change when a household faces a CHS. However, the results in Table 6 present changes in the relative share of parenting and housework does not indicate how parents may react to the level changes in parenting and housework when there is a potential increase in the overall amount of work within the household. Figure 5 supports the same general story that there does not appear to be much of a difference between females who report having a CHS and those that do not when looking at their perceptions of the division of parental and household work.

## 4.2 Couple Fixed Effects Results

Overall, the pooled cross section results seem to support previous findings that assuming cardinality of Likert outcome variables does not appear to be an unreasonable assumption, given the similarity of the ordered logit and OLS results. Therefore, as we turn to the couple fixed effects results, I will be estimating all results using OLS, given the issues with estimating fixed effects models with an ordered logit or an ordered probit.

Panel A of Table 7 presents the results from estimating the couple fixed-effects model in Equation (2) for the outcomes on parenting attitudes. It is worth noting that the magnitude of the point estimates are smaller, which could be explained in one of two ways. First, the coefficient estimates from the pooled cross-section results may have been biased by time-constant differences between couples that face child health shocks and those that do not. However, there may also be some measurement error in the timing of noting a CHS that

would be more apparent when doing analysis for within couple changes. It is reasonable that perhaps couples do not initially suspect issues that their child is having to be as serious or long-lasting, which could result in them not identifying a CHS initially. This could potentially bias the couple fixed effects estimates toward zero.

Yet, even though the point estimates are of a smaller magnitude when comparing to the cross-sectional results, the magnitude of these estimates still represents a sizable impact when comparing the results to the average increase in response for women when they have a second child. For example, change in response for the first outcome (parenting is harder than anticipated) for women who have a CHS in their household is approximately 40% of the average change for women when they have a second child. Again, though the estimates are not statistically significant, the point estimates for the male interaction term are all negative and of slightly larger magnitude than the cross-sectional results, indicating that men may not be experiencing the same shifts in their parental responsibilities.

Table 8 splits the variable of interest according to the continuous duration that the child is impacted by the CHS. The results are consistent with the results found in Table 7 with the point estimates for women indicating a negative impact to parenting attitudes while point estimates for the interaction term indicate a different experience for men. Interestingly, the point estimates for women appear to be largest for women when the duration of the CHS is short, except for Column 3. This seems to indicate that women may adjust to their parenting responsibilities over time or that families adjust in other ways by finding additional help. In column 3, the results show that mothers of children with a longer duration CHS appear to feel more trapped by their parental responsibilities.

Panel B of Table 8 presents the analogous results with the CHS variable split according to the age at which the child was diagnosed. Mothers of children diagnosed at young ages



tend to have more negative views on parenting, though the point estimates are only statistically significant for three of the outcomes. Men, again, seem to have a dissimilar experience, with point estimates indicating that they experience a less negative impact on their parenting views than their female counterparts.

Results for the life and relationship satisfaction outcome variables are shown in Table 9. For all four outcomes, point estimates indicate that women become less satisfied with their life and family relationships when they face a CHS, though now the drop in satisfaction is only statistically significant for one of the outcomes. In contrast, the point estimates for the interaction terms indicate a substantial difference for men. Again, these results are statistically insignificant.

Table 10 presents the result for Equation (2) where the CHS variable is split along observable measures. In Panel A, the CHS variable is again split according to the continuous duration of the CHS. The coefficients for the longer duration CHS are larger across most life and relationship satisfaction outcomes yet remain consistent with the results found in Table 9. These results are consistent with what one might expect from more severe and longer lasting health shocks in a household, indicating that women experience a larger drop in their satisfaction level when a CHS is more severe or longer lasting. In contrast, the interaction terms all have positive point estimates except for Column 1, again indicating that men are not experiencing the same effects of a CHS.

Similarly, Panel B of Table 10 splits the CHS variable according to the youngest age at which a child was observed to have a CHS with the idea that caring for a child with a CHS may not be equally difficult at all ages. Unsurprisingly, women whose children are diagnosed at younger ages seem to feel the brunt of the impact.

Table 11 presents the results for the impacts on how individuals feel about the equitable division of parenting and housework<sup>14</sup>. There is no evidence that having a child with a CHS shifts the relative burden of parenting work in any meaningful way. This is not to say that there is not inequality in the division of parenting work. Summary statistics show that for both parents with and without children with a CHS, women are far more likely to feel that they are doing more than their fair share of the parenting. However, having a child diagnosed with CHS does not appear to increase or decrease this inequality in parenting work. Column 2 presents the results for the relative burden of housework, finding the couples' feelings on the relative burden of housework remain unchanged when the household is faced with a CHS. Again, like the pooled cross-section results, these findings speak only to the relative share of the burden. While the responses to these questions may not change for couples when their CHS status changes, there may still be level changes in the amount of work that each individual undertakes when a shock occurs.

### 4.3 Heterogeneity of Responses

It is reasonable to suppose that individuals will have different responses to the shock depending on a variety of factors such as education and labor force decisions. In order to investigate the heterogeneous responses of couples, I limit the sample to only those individuals who I observe to switch from no CHS to a CHS at some point within the panel. This allows me to observe a baseline of education, labor force participation, and average number of hours worked per week for females in the year before the household is observed to have a CHS. Table 12 compares the original analysis sample (Panel A) to this subsample (Panel B) for all the parenting and satisfaction outcomes. While point estimates vary

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<sup>14</sup> Outcome variables are Likert scale questions. Results remain qualitatively unchanged if the variables are transformed to indicator variables regardless of the cutoff points used to generate the indicators. However, the statistical significance of the coefficients does vary depending on the form of the outcome variables.

slightly, the results generated with the CHS subsample remain reassuringly similar to those generated with the full analysis sample. This provides evidence that the full sample results are not driven by a difference in trends between families with and without CHS.

Table 13 presents the analogous results for the parenting outcomes. The results seem to indicate that women who are not in the labor force, working fewer hours in the labor force, or less educated appear to be experiencing more negative impacts from the CHS. Specifically, these mothers are more likely to feel trapped by their parenting responsibilities and more likely to feel that parenting is more work than pleasure when their household experiences a CHS. The magnitude of the change in responses for feeling trapped by parenting responsibilities is approximately 90% that of women having a second child, and the change in response for parenting being more work than pleasure is roughly 150% that of women having a second child. Conversely, the point estimates for the interaction terms, though slightly less statistically significant for some outcomes, indicate that the men in these households are not experiencing the same negative effects. Though not statistically significant for all outcomes due to the reduced sample size, women who were not in the labor force in the year before the CHS seem particularly vulnerable to negative parenting experiences.

These same women, those where the wife is not in the labor force, working less, or is less educated, also appear to have the largest drops in life and relationship satisfaction. Table 14 indicates that women who were working less, not in the labor force, or less educated are less satisfied with their marriage when they face a CHS. In particular, women who were not in the labor force see an average drop of 0.357 in their satisfaction with their spouse. This is nearly 18% of the average drop that is seen in the lead up to a separation. They also become less satisfied in their partner's relationship with their children. The

relationship impacts, therefore, may not be homogenous across all family types, which could be the result of differing spousal expectations given the amount of paid labor that the wife supplies to the household.

Table 15 presents the results of this subsample for the perception of the division of the labor within the household. Panel A splits the sample of interest into couples where the wife was observed to work 20 hours or less in the year prior to the CHS and couples where the wife was working more than 20 hours. Panel B splits the sample into couples according to whether or not the wife was in the labor force in the year prior to the CHS. For both Panel A and Panel B, the impact remains small and statistically insignificant. Panel C splits the sample of interest according to the education level of the wife in the year prior to the CHS. Though most of the coefficients on the variables of interest remain small and statistically insignificant, Column 4 indicates that women with more education may experience a slight decrease in the inequality of housework division when their household experiences a CHS.

## 5 Conclusion

In conclusion, the results of this paper support the notion that when a household is faced with a shock that increases the workload within a household, the woman may shoulder a disproportionate share of the increased burden. Results support the notion that the woman seems to feel added stress related to parenting even when controlling for any labor force adjustments that the household may make to care for the disabled or chronically ill child. In addition, point estimates indicate that women become less satisfied with their partner, their partner's relationship with their children, and their life overall.

These results are surprisingly consistent with both sides of the family composition literature. On one hand, women tend to feel more trapped by their parenting responsibilities when

they are faced with a CHS. While women may be more dissatisfied with their partner, the needs of their children may induce them to stay in their marriage. Conversely, the raw partnership satisfaction results indicate that CHS do lead to more dissatisfaction in couples' relationship, which would explain higher divorce rates. If, indeed, child health shocks increase divorce rates, those divorces may be the result of the female partner's dissatisfaction in the relationship.

Additionally, households where the women are less educated or less active in the labor force in the year prior to the health shock face the most negative outcomes. Since CHS do not impact all families equally, policies should take this heterogeneity into account by perhaps providing more support to women without college educations or women who do not work outside the house.

More generally, these results indicate that household shocks may play an important role when it comes to reconciling neoclassical economic theory and household outcomes like marital stability. If the workload within a household increases in ways that were unanticipated, the equilibrium within the household changes. Since the shock was unforeseen, individuals may not have anticipated how their partners would react. As the household makes adjustments toward a new equilibrium, the stability of the match comes into question since expectations and potentially even household bargaining power has been altered.

# Figures

FIGURE 1: CONTINUOUS DURATION OF CHS

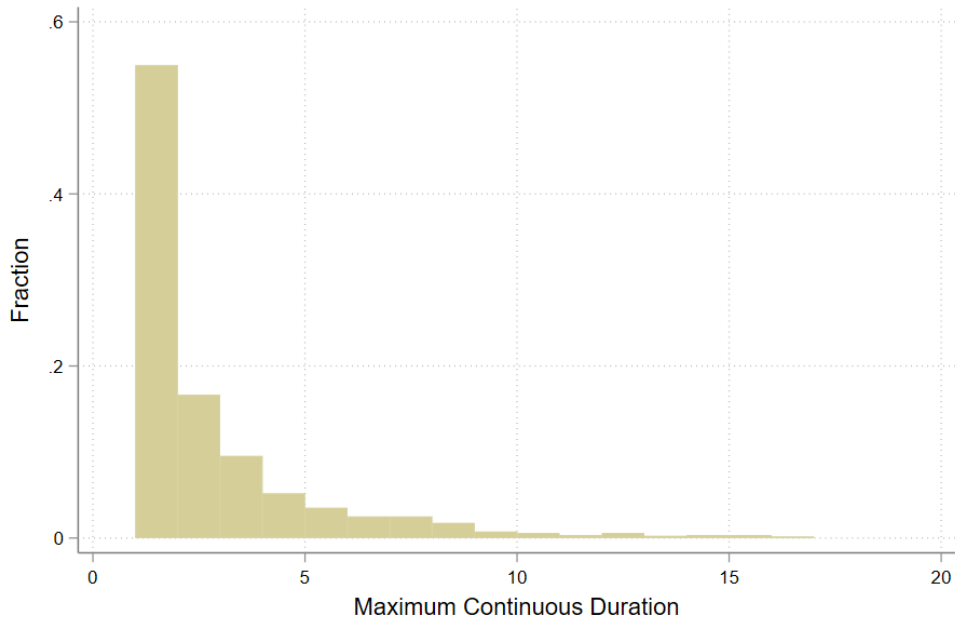


FIGURE 2: AGE OF CHILD AT FIRST DIAGNOSIS OF CHS

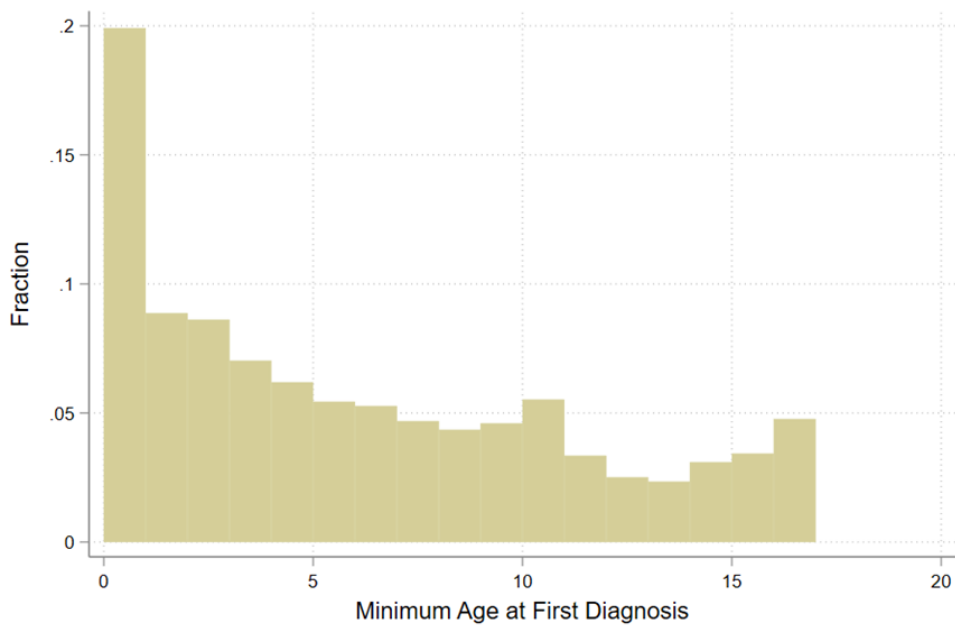


FIGURE 3: ORDERED LOGIT MARGINAL EFFECTS PARENTING OUTCOMES

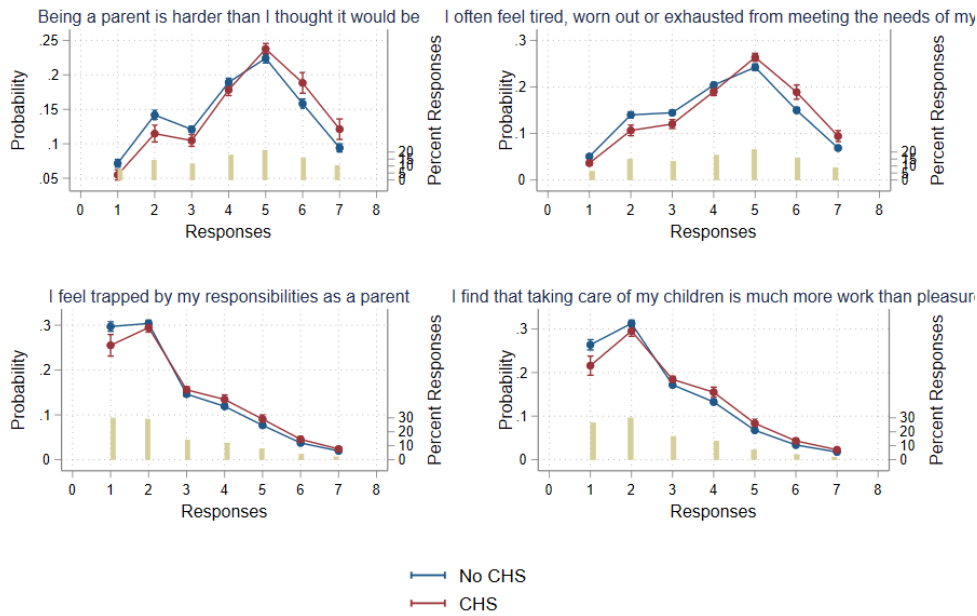


FIGURE 4: ORDERED LOGIT MARGINAL EFFECTS LIFE AND RELATIONSHIP SATISFACTION

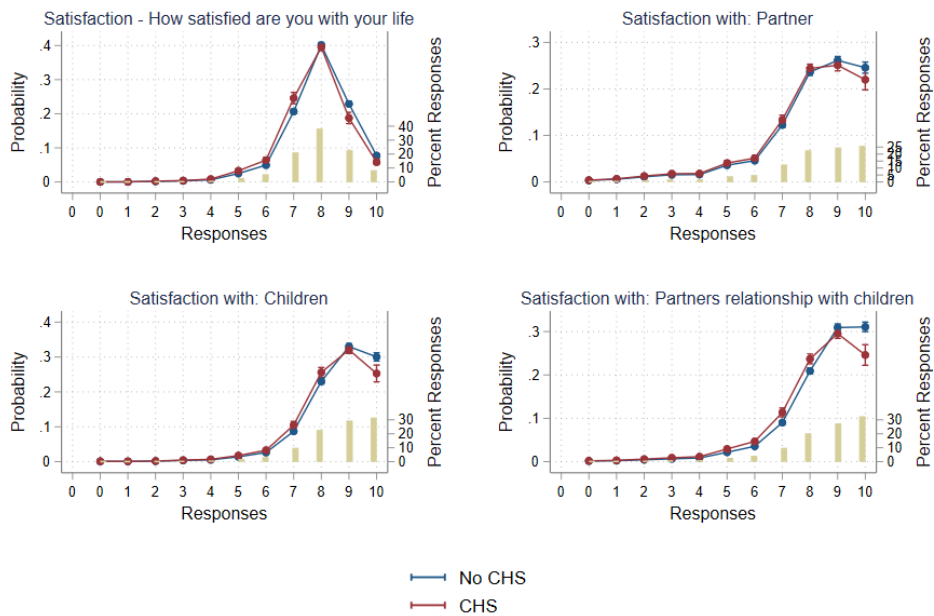
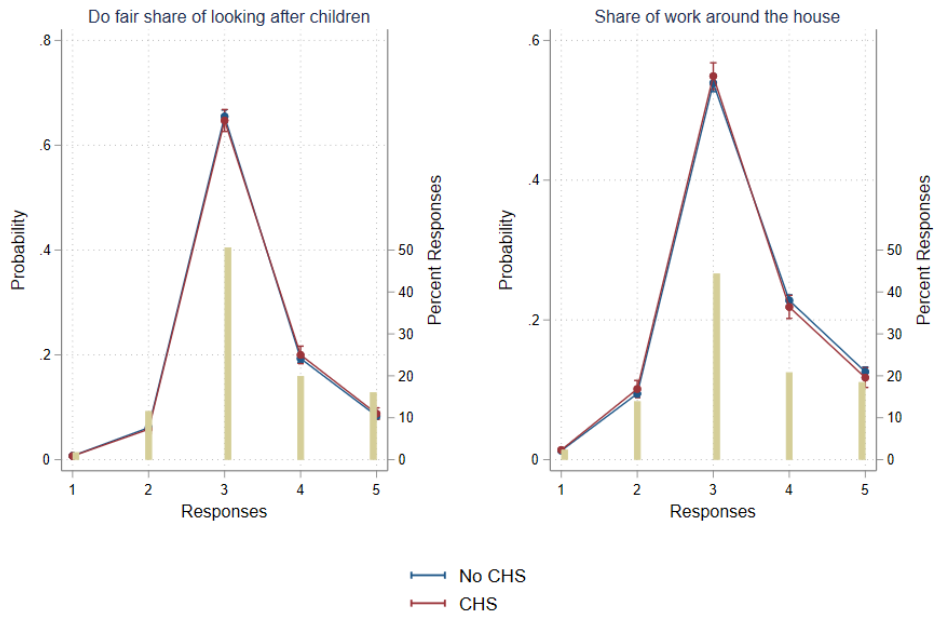


FIGURE 5: ORDERED LOGIT MARGINAL EFFECTS DIVISION OF LABOR





## Tables

TABLE 1: SOCIOECONOMIC SUMMARY STATISTICS FOR COUPLES IN THE SAMPLE

	(1)	(2)	(3)
	CHS	No CHS	Difference
Married before birth of first child	0.824 (0.381)	0.810 (0.393)	0.0147
Wife's total fertility	2.651 (1.114)	2.206 (1.035)	0.445***
Wife's age at first birth	27.43 (5.161)	28.50 (5.166)	-1.068***
Wife completed year 12 of school	0.734 (0.442)	0.804 (0.397)	-0.0698***
Husband completed year 12 of school	0.802 (0.398)	0.831 (0.375)	-0.0289*
Wife completed Bachelor degree	0.305 (0.461)	0.358 (0.479)	-0.0528**
Husband completed Bachelor degree	0.255 (0.436)	0.307 (0.462)	-0.0528**
Wife is indigenous	0.0307 (0.173)	0.0216 (0.145)	0.00913
Husband is indigenous	0.0231 (0.150)	0.0188 (0.136)	0.00421
Wife born in Australia	0.824 (0.381)	0.759 (0.428)	0.0656***
Husband born in Australia	0.802 (0.398)	0.745 (0.436)	0.0578***
N	911	2869	3780

TABLE 2: OUTCOME VARIABLE SUMMARY STATISTICS

Outcomes	Male			Female		
	CHS	No CHS	Difference	CHS	No CHS	Difference
Parenting is harder than anticipated: 1-7 (strongly agree)	4.177 (1.684)	3.931 (1.684)	0.246***	4.737 (1.788)	4.449 (1.828)	0.288***
Parenting leaves feeling tired or exhausted: 1-7 (strongly agree)	4.021 (1.623)	3.792 (1.641)	0.229***	4.792 (1.661)	4.527 (1.716)	0.264***
Trapped by parental responsibilities: 1-7 (strongly agree)	2.722 (1.594)	2.577 (1.518)	0.145***	2.788 (1.712)	2.594 (1.624)	0.194***
Parenting is more work than pleasure: 1-7 (strongly agree)	2.843 (1.524)	2.627 (1.476)	0.216***	2.871 (1.623)	2.605 (1.556)	0.266***
Overall life satisfaction: 0-10 (extremely satisfied)	7.719 (1.329)	7.859 (1.256)	-0.140***	7.785 (1.367)	8.027 (1.216)	-0.242***
Satisfaction with spouse: 0-10 (extremely satisfied)	8.181 (1.882)	8.217 (1.855)	-0.0356	7.875 (2.015)	8.023 (1.969)	-0.149***
Satisfaction with relationship with child(ren): 0-10 (extremely satisfied)	8.306 (1.587)	8.553 (1.475)	-0.247***	8.473 (1.396)	8.757 (1.300)	-0.284***
Satisfaction with spouse's relationship with child(ren): 0-10 (extremely satisfied)	8.446 (1.711)	8.727 (1.500)	-0.281***	7.863 (1.929)	8.349 (1.713)	-0.486***
Do you think you do your fair share of looking after children? 1 (much less than fair share) - 5 (much more than fair share)	2.835 (0.716)	2.824 (0.703)	0.0114	3.953 (0.865)	3.911 (0.828)	0.0422*
Do you think you do your fair share around the house? 1 (much less than fair share) - 5 (much more than fair share)	2.888 (0.877)	2.856 (0.824)	0.0317	3.904 (0.941)	3.926 (0.890)	-0.0221
N	2144	18376	20520	2144	18376	20520

TABLE 3: POOLED CROSS-SECTION RESULTS FOR PARENTING OUTCOMES

VARIABLES	(1) Parenting is harder than anticipated	(2) Parenting leaves feeling tired or exhausted	(3) Trapped by parental responsibilities	(4) Parenting is more work than pleasure
<b>Panel A: Ordered Logit (Full set of Controls)</b>				
CHS	0.284*** (0.0695)	0.344*** (0.0665)	0.210*** (0.0679)	0.264*** (0.0668)
CHS X Male	-0.0424 (0.0762)	-0.0435 (0.0738)	-0.0503 (0.0767)	-0.0611 (0.0745)
Male	-0.564*** (0.0349)	-0.840*** (0.0340)	0.0496 (0.0340)	0.0792** (0.0323)
<b>Panel B: Ordered Logit (No Labor Controls)</b>				
CHS	0.282*** (0.0695)	0.343*** (0.0663)	0.208*** (0.0680)	0.266*** (0.0668)
CHS X Male	-0.0424 (0.0761)	-0.0423 (0.0738)	-0.0497 (0.0766)	-0.0608 (0.0744)
Male	-0.563*** (0.0348)	-0.840*** (0.0340)	0.0488 (0.0339)	0.0794** (0.0323)
Observations	39,740	39,740	39,740	39,740
Mean Y	4.218	4.185	2.603	2.641

Standard errors clustered at the couple level in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Panel A includes controls for education, age, age squared, labor force status, the number of hours worked on average each week, characteristics of the husband's and wife's country of birth, citizenship, parental education, parental occupation, and parental relationship stability, and total yearly income for both the man and the woman in the partnership. All specifications also include household income, household income squared, an indicator for home ownership, marital status, duration of the spousal relationship, duration of the relationship squared, total non-resident children, and the ages of all resident children by tracking the number of children within each of 5 age bins, 0-2 years, 3-5 years, 6-10 years, 11-14 years, and 15-17, and state-by-year fixed effects. Panel B excludes household income as well as income, labor force status, and usual weekly hours worked for both the husband and wife in the couple.

TABLE 4: POOLED CROSS-SECTION, PARENTING RESULTS, NO LABOR CONTROLS

VARIABLES	(1) Parenting is harder than anticipated	(2) Parenting leaves feeling tired or exhausted	(3) Trapped by parental responsibilities	(4) Parenting is more work than pleasure
<b>Panel A: Ordered Logit (Coefficient Estimates)</b>				
CHS	0.284*** (0.0695)	0.344*** (0.0665)	0.210*** (0.0679)	0.264*** (0.0668)
CHS X Male	-0.0424 (0.0762)	-0.0435 (0.0738)	-0.0503 (0.0767)	-0.0611 (0.0745)
Male	-0.564*** (0.0349)	-0.840*** (0.0340)	0.0496 (0.0340)	0.0792** (0.0323)
<b>Panel B: OLS (Coefficient Estimates)</b>				
CHS	0.260*** (0.0632)	0.308*** (0.0548)	0.192*** (0.0593)	0.209*** (0.0543)
CHS X Male	-0.0245 (0.0707)	-0.0344 (0.0627)	-0.0366 (0.0681)	-0.0501 (0.0623)
Male	-0.524*** (0.0327)	-0.737*** (0.0291)	-0.0144 (0.0286)	0.0249 (0.0253)
Observations	39,740	39,740	39,740	39,740
Mean Y	4.218	4.185	2.603	2.641

Standard errors clustered at the couple level in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Panel A includes controls for education, age, age squared, labor force status, the number of hours worked on average each week, characteristics of the husband's and wife's country of birth, citizenship, parental education, parental occupation, and parental relationship stability, and total yearly income for both the man and the woman in the partnership. All specifications also include household income, household income squared, an indicator for home ownership, marital status, duration of the spousal relationship, duration of the relationship squared, total non-resident children, and the ages of all resident children by tracking the number of children within each of 5 age bins, 0-2 years, 3-5 years, 6-10 years, 11-14 years, and 15-17, and state-by-year fixed effects. Panel B excludes household income as well as income, labor force status, and usual weekly hours worked for both the husband and wife in the couple.

TABLE 5: POOLED CROSS-SECTION RESULTS FOR SATISFACTION OUTCOMES

VARIABLES	(1) Life satisfaction	(2) Relationship satisfaction with partner	(3) Satisfaction of relationship with children	(4) Satisfaction of partner's relationship with children
<b>Panel A: Ordered Logit (Coefficient Estimates)</b>				
CHS	-0.302*** (0.0662)	-0.145** (0.0652)	-0.238*** (0.0651)	-0.324*** (0.0676)
CHS X Male	0.135* (0.0772)	0.121** (0.0614)	0.103 (0.0707)	0.199** (0.0796)
Male	-0.257*** (0.0318)	0.182*** (0.0261)	-0.251*** (0.0329)	0.470*** (0.0325)
<b>Panel B: OLS (Coefficient Estimates)</b>				
CHS	-0.207*** (0.0431)	-0.125* (0.0675)	-0.152*** (0.0475)	-0.304*** (0.0608)
CHS X Male	0.0992* (0.0516)	0.103* (0.0596)	0.0408 (0.0555)	0.173** (0.0714)
Male	-0.167*** (0.0205)	0.192*** (0.0264)	-0.200*** (0.0238)	0.379*** (0.0275)
Observations	39,740	39,740	39,740	39,740
Mean Y	7.923	8.111	8.627	8.498

Standard errors clustered at the couple level in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. All regressions include controls for education, age, age squared, labor force status, the number of hours worked on average each week, characteristics of the husband's and wife's country of birth, citizenship, parental education, parental occupation, and parental relationship stability, and total yearly income for both the man and the woman in the partnership. All specifications also include household income, household income squared, an indicator for home ownership, marital status, duration of the spousal relationship, duration of the relationship squared, total non-resident children, and the ages of all resident children by tracking the number of children within each of 5 age bins, 0-2 years, 3-5 years, 6-10 years, 11-14 years, and 15-17, and state-by-year fixed effects.

TABLE 6 POOLED CROSS-SECTION RESULTS FOR PARENTING AND HOUSEWORK SHARE

VARIABLES	(1) Do fair share of looking after children 1 (much less) – 5 (much more)	(2) Do fair share of housework 1 (much less) – 5 (much more)
<b>Panel A: Ordered Logit (Coefficient Estimates)</b>		
CHS	0.0550 (0.0677)	-0.0782 (0.0696)
CHS X Male	-0.0628 (0.118)	0.141 (0.122)
Male	-3.019*** (0.0607)	-2.412*** (0.0600)
<b>Panel B: OLS (Coefficient Estimates)</b>		
CHS	0.0251 (0.0301)	-0.0423 (0.0332)
CHS X Male	-0.0238 (0.0454)	0.0721 (0.0557)
Male	-1.091*** (0.0193)	-1.075*** (0.0239)
Observations	39,740	39,740
Mean Y	3.370	3.391

Standard errors clustered at the couple level in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. All regressions include controls for education, age, age squared, labor force status, the number of hours worked on average each week, characteristics of the husband’s and wife’s country of birth, citizenship, parental education, parental occupation, and parental relationship stability, and total yearly income for both the man and the woman in the partnership. All specifications also include household income, household income squared, an indicator for home ownership, marital status, duration of the spousal relationship, duration of the relationship squared, total non-resident children, and the ages of all resident children by tracking the number of children within each of 5 age bins, 0-2 years, 3-5 years, 6-10 years, 11-14 years, and 15-17, and state-by-year fixed effects.

TABLE 7: PANEL RESULTS - PARENTING OUTCOMES (OLS)

VARIABLES	(1) Parenting is harder than anticipated	(2) Parenting leaves feeling tired or exhausted	(3) Trapped by parental responsibilities	(4) Parenting is more work than pleasure
<b>PANEL A: Base Specification</b>				
CHS	0.0878** (0.0434)	0.0753** (0.0374)	0.116*** (0.0399)	0.0603 (0.0413)
CHS X Male	-0.0589 (0.0518)	-0.0500 (0.0485)	-0.0411 (0.0509)	-0.0244 (0.0522)
Observations	39,680	39,680	39,680	39,680
Mean Y	4.218	4.185	2.603	2.641

Standard errors clustered at the couple level in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. All regressions include controls for education, age, age squared, labor force status, the number of hours worked on average each week, and total yearly income for both the man and the woman in the partnership. All specifications also include household income, household income squared, an indicator for home ownership, marital status, duration of the spousal relationship, duration of the relationship squared, total non-resident children, and the ages of all resident children by tracking the number of children within each of 5 age bins, 0-2 years, 3-5 years, 6-10 years, 11-14 years, and 15-17, and state-by-year fixed effects.

TABLE 8: PANEL RESULTS - PARENTING SPLITTING CHS (OLS)

VARIABLES	(1) Parenting is harder than anticipated	(2) Parenting leaves feeling tired or exhausted	(3) Trapped by parental responsibilities	(4) Parenting is more work than pleasure
<b>Panel A: Treatment split by duration</b>				
Short Duration (1 year)	0.170*** (0.0604)	0.108* (0.0552)	0.0999* (0.0544)	0.121** (0.0594)
Long Duration (>1 year)	0.0248 (0.0608)	0.0487 (0.0503)	0.129** (0.0572)	0.0149 (0.0574)
Short Duration X Male	-0.130* (0.0728)	-0.0683 (0.0749)	-0.0287 (0.0741)	-0.0979 (0.0777)
Long Duration X Male	-0.00504 (0.0723)	-0.0354 (0.0631)	-0.0519 (0.0718)	0.0309 (0.0703)
<b>Panel B: Treatment split by diagnosis age</b>				
Diagnosed Younger (≤6 y.o.)	0.170*** (0.0541)	0.100** (0.0455)	0.132*** (0.0499)	0.0661 (0.0502)
Diagnosed Older (> 6 y.o.)	-0.0733 (0.0712)	0.0238 (0.0648)	0.0845 (0.0665)	0.0535 (0.0741)
Diagnosed Younger X Male	-0.145** (0.0633)	-0.0753 (0.0586)	-0.00289 (0.0622)	-0.00771 (0.0620)
Diagnose Older X Male	0.111 (0.0887)	0.00193 (0.0849)	-0.116 (0.0887)	-0.0609 (0.0962)
Observations	39,680	39,680	39,680	39,680

Standard errors clustered at the couple level in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. All regressions include controls for education, age, age squared, labor force status, the number of hours worked on average each week, and total yearly income for both the man and the woman in the partnership. All specifications also include household income, household income squared, an indicator for home ownership, marital status, duration of the spousal relationship, duration of the relationship squared, total non-resident children, and the ages of all resident children by tracking the number of children within each of 5 age bins, 0-2 years, 3-5 years, 6-10 years, 11-14 years, and 15-17, and state-by-year fixed effects.



TABLE 9: PANEL RESULTS - SATISFACTION (OLS)

VARIABLES	(1)	(2)	(3)	(4)
	Life satisfaction	Relationship satisfaction with partner	Satisfaction of relationship with children	Satisfaction of partner's relationship with children
<b>Base Specification</b>				
CHS	-0.0714** (0.0315)	-0.0690 (0.0449)	-0.0258 (0.0317)	-0.0517 (0.0455)
CHS X Male	0.0505 (0.0403)	0.0529 (0.0476)	0.0561 (0.0441)	0.0462 (0.0548)
Observations	39,680	39,680	39,680	39,680
Mean Y	7.923	8.111	8.627	8.498

Standard errors clustered at the couple level in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. All regressions include controls for education, age, age squared, labor force status, the number of hours worked on average each week, and total yearly income for both the man and the woman in the partnership. All specifications also include household income, household income squared, an indicator for home ownership, marital status, duration of the spousal relationship, duration of the relationship squared, total non-resident children, and the ages of all resident children by tracking the number of children within each of 5 age bins, 0-2 years, 3-5 years, 6-10 years, 11-14 years, and 15-17, and state-by-year fixed effects.

TABLE 10: PANEL RESULTS - SATISFACTION SPLITTING CHS (OLS)

VARIABLES	(1) Life satisfaction	(2) Relationship satisfaction with partner	(3) Satisfaction of relationship with children	(4) Satisfaction of partner's relationship with children
<b>Panel A: Treatment split by duration</b>				
Short Duration (1 year)	-0.0336 (0.0424)	-0.0847 (0.0621)	1.61e-05 (0.0423)	-0.0426 (0.0612)
Long Duration (>1 year)	-0.0995** (0.0456)	-0.0606 (0.0642)	-0.0560 (0.0466)	-0.0668 (0.0667)
Short Duration X Male	-0.0148 (0.0564)	0.0244 (0.0711)	0.0550 (0.0587)	0.0264 (0.0744)
Long Duration X Male	0.101* (0.0563)	0.0812 (0.0660)	0.0658 (0.0646)	0.0700 (0.0799)
<b>Panel B: Treatment split by diagnosis age</b>				
Diagnosed Younger ( $\leq 6$ y.o.)	-0.0721* (0.0393)	-0.0816 (0.0581)	-0.0710* (0.0387)	-0.102* (0.0560)
Diagnosed Older ( $> 6$ y.o.)	-0.0675 (0.0536)	-0.0516 (0.0708)	0.0476 (0.0567)	0.0347 (0.0796)
Diagnosed Younger X Male	0.0603 (0.0508)	0.00518 (0.0594)	0.0922* (0.0520)	0.0561 (0.0678)
Diagnose Older X Male	0.0290 (0.0664)	0.152* (0.0812)	-2.62e-05 (0.0821)	0.0371 (0.0945)
Observations	39,680	39,680	39,680	39,680

Standard errors clustered at the couple level in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. All regressions include controls for education, age, age squared, labor force status, the number of hours worked on average each week, and total yearly income for both the man and the woman in the partnership. All specifications also include household income, household income squared, an indicator for home ownership, marital status, duration of the spousal relationship, duration of the relationship squared, total non-resident children, and the ages of all resident children by tracking the number of children within each of 5 age bins, 0-2 years, 3-5 years, 6-10 years, 11-14 years, and 15-17, and state-by-year fixed effects.

TABLE 11: PANEL RESULTS - RELATIVE SHARE OF PARENTING AND HOUSEWORK (OLS)

VARIABLES	(1)	(2)
	Do fair share of looking after children 1 (much less) – 5 (much more)	Do fair share of housework 1 (much less) – 5 (much more)
CHS	0.0115 (0.0199)	-0.000754 (0.0217)
CHS X Male	-0.0128 (0.0299)	-0.00143 (0.0343)
Observations	39,680	39,680
Mean Y	3.370	3.391

Standard errors clustered at the couple level in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. All regressions include controls for education, age, age squared, labor force status, the number of hours worked on average each week, and total yearly income for both the man and the woman in the partnership. All specifications also include household income, household income squared, an indicator for home ownership, marital status, duration of the spousal relationship, duration of the relationship squared, total non-resident children, and the ages of all resident children by tracking the number of children within each of 5 age bins, 0-2 years, 3-5 years, 6-10 years, 11-14 years, and 15-17, and state-by-year fixed effects.

TABLE 12: COMPARISON OF SAMPLES (OLS)

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Parenting is harder than anticipated	Parenting leaves feeling tired or exhausted	Trapped by parental responsibiliti es	Parenting is more work than pleasure	Life satisfactio n	Relationship satisfaction with partner	Satisfaction of relationship with children	Satisfaction of partner's relationship with children
<b>Panel A: Full Analysis Sample</b>								
CHS	0.0878** (0.0434)	0.0753** (0.0374)	0.116*** (0.0399)	0.0603 (0.0413)	-0.0714** (0.0315)	-0.0690 (0.0449)	-0.0258 (0.0317)	-0.0517 (0.0455)
CHS X Male	-0.0589 (0.0518)	-0.0500 (0.0485)	-0.0411 (0.0509)	-0.0244 (0.0522)	0.0505 (0.0403)	0.0529 (0.0476)	0.0561 (0.0441)	0.0462 (0.0548)
Observations	39,680	39,680	39,680	39,680	39,680	39,680	39,680	39,680
<b>Panel B: Sample of couples where the shock is observed</b>								
CHS	0.0265 (0.0596)	0.0710 (0.0522)	0.148*** (0.0552)	0.119** (0.0545)	-0.0537 (0.0380)	-0.120** (0.0590)	-0.0633 (0.0427)	-0.128** (0.0542)
CHS X Male	0.0228 (0.0717)	-0.0779 (0.0631)	-0.118* (0.0678)	-0.146** (0.0637)	-0.00282 (0.0500)	0.0567 (0.0651)	0.0601 (0.0603)	0.112 (0.0692)
Observations	7,644	7,644	7,644	7,644	7,644	7,644	7,644	7,644

Standard errors clustered at the couple level in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. All regressions include controls for education, age, age squared, labor force status, the number of hours worked on average each week, and total yearly income for both the man and the woman in the partnership. All specifications also include household income, household income squared, an indicator for home ownership, marital status, duration of the spousal relationship, duration of the relationship squared, total non-resident children, and the ages of all resident children by tracking the number of children within each of 5 age bins, 0-2 years, 3-5 years, 6-10 years, 11-14 years, and 15-17, and state-by-year fixed effects.

TABLE 13: HETEROGENEITY OF PARENTING OUTCOMES (OLS)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	Parenting is harder than anticipated	Parenting leaves feeling tired or exhausted	Trapped by parental responsibilities	Parenting is more work than pleasure	Parenting is harder than anticipated	Parenting leaves feeling tired or exhausted	Trapped by parental responsibilities	Parenting is more work than pleasure
<b>Panel A: Hours Worked</b>		Wife <= 20hrs at baseline				Wife >20 hrs at baseline		
CHS	0.0408 (0.0771)	0.0888 (0.0688)	0.184** (0.0746)	0.171** (0.0746)	0.00973 (0.0945)	0.0736 (0.0757)	0.126 (0.0860)	-0.0419 (0.0783)
CHS X Male	-0.0135 (0.0893)	-0.129 (0.0813)	-0.115 (0.0889)	-0.182** (0.0819)	0.0865 (0.122)	0.00721 (0.102)	-0.125 (0.107)	-0.0721 (0.103)
Observations	4,706	4,706	4,706	4,706	2,938	2,938	2,938	2,938
<b>Panel B: Labor Force Participation</b>		Wife not in LF at baseline				Wife in LF at baseline		
CHS	0.153 (0.108)	0.153 (0.0929)	0.300*** (0.113)	0.302*** (0.101)	0.00654 (0.0724)	0.0401 (0.0633)	0.103 (0.0630)	0.0528 (0.0631)
CHS X Male	0.00942 (0.128)	-0.199* (0.111)	-0.214 (0.130)	-0.205** (0.100)	0.0280 (0.0877)	-0.0220 (0.0775)	-0.0745 (0.0800)	-0.120 (0.0818)
Observations	2,298	2,298	2,298	2,298	5,346	5,346	5,346	5,346
<b>Panel C: Education</b>		Wife yr 12 or less education at baseline				Wife more than yr 12 education at baseline		
CHS	0.0594 (0.0915)	0.110 (0.0827)	0.180* (0.0915)	0.158* (0.0920)	0.0489 (0.0752)	0.0468 (0.0659)	0.131* (0.0698)	0.0655 (0.0667)
CHS X Male	0.0172 (0.109)	-0.149 (0.0965)	-0.0827 (0.113)	-0.141 (0.0951)	0.0313 (0.0965)	-0.0232 (0.0847)	-0.148* (0.0836)	-0.148* (0.0866)
Observations	3,278	3,278	3,278	3,278	4,366	4,366	4,366	4,366

Standard errors clustered at the couple level in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. All regressions include controls.

TABLE 14: HETEROGENEITY OF SATISFACTION OUTCOMES (OLS)

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Life satisfaction	Relationship satisfaction with partner	Satisfaction of relationship with children	Satisfaction of partner's relationship with children	Life satisfaction	Relationship satisfaction with partner	Satisfaction of relationship with children	Satisfaction of partner's relationship with children
<b>Panel A: Hours Worked</b>		Wife <= 20hrs at baseline				Wife >20 hrs at baseline		
CHS	-0.0620 (0.0487)	-0.167** (0.0741)	-0.0839 (0.0561)	-0.173** (0.0697)	-0.0695 (0.0647)	-0.0826 (0.102)	-0.0584 (0.0673)	-0.0741 (0.0882)
CHS X Male	-0.0627 (0.0678)	0.0938 (0.0813)	0.0232 (0.0770)	0.193** (0.0894)	0.104 (0.0726)	-0.00709 (0.111)	0.122 (0.0987)	-0.0229 (0.113)
Observations	4,706	4,706	4,706	4,706	2,938	2,938	2,938	2,938
<b>Panel B: Labor Force Participation</b>		Wife not in LF at baseline				Wife in LF at baseline		
CHS	-0.0901 (0.0724)	-0.357*** (0.108)	-0.158** (0.0780)	-0.217** (0.104)	-0.0506 (0.0446)	-0.0198 (0.0691)	-0.0167 (0.0480)	-0.0804 (0.0600)
CHS X Male	-0.124 (0.105)	0.141 (0.129)	0.0823 (0.101)	0.300** (0.141)	0.0568 (0.0553)	0.0162 (0.0754)	0.0478 (0.0759)	0.0222 (0.0781)
Observations	2,298	2,298	2,298	2,298	5,346	5,346	5,346	5,346
<b>Panel C: Education</b>		Wife yr 12 or less education at baseline				Wife more than yr 12 education at baseline		
CHS	-0.0873 (0.0617)	-0.205** (0.0912)	-0.112* (0.0654)	-0.191** (0.0865)	-0.0437 (0.0495)	-0.0740 (0.0799)	-0.0487 (0.0540)	-0.0880 (0.0672)
CHS X Male	-0.0696 (0.0836)	0.0667 (0.0994)	0.0637 (0.0872)	0.260** (0.111)	0.0559 (0.0603)	0.0428 (0.0876)	0.0560 (0.0846)	-0.0161 (0.0889)
Observations	3,278	3,278	3,278	3,278	4,366	4,366	4,366	4,366

Standard errors clustered at the couple level in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. All regressions include controls.

TABLE 15: HETEROGENEITY OF SHARE OF PARENTING AND HOUSEWORK (OLS)

	(1)	(2)	(3)	(4)
VARIABLES	Do fair share of looking after children	Do fair share of housework	Do fair share of looking after children	Do fair share of housework
<b>Panel A: Hours Worked</b>	Wife <= 20hrs at baseline		Wife >20 hrs at baseline	
CHS	0.0235 (0.0317)	0.00712 (0.0358)	-0.0178 (0.0497)	-0.0694 (0.0544)
CHS X Male	-0.0501 (0.0514)	-0.0337 (0.0556)	0.0625 (0.0752)	0.0968 (0.0840)
Observations	4,706	4,706	2,938	2,938
<b>Panel B: Labor Force Participation</b>	Wife not in LF at baseline		Wife in LF at baseline	
CHS	0.0413 (0.0448)	0.0615 (0.0464)	-0.00626 (0.0345)	-0.0560 (0.0384)
CHS X Male	-0.00968 (0.0723)	-0.0662 (0.0766)	-0.00838 (0.0528)	0.0521 (0.0585)
Observations	2,298	2,298	5,346	5,346
<b>Panel C: Education</b>	Wife yr 12 or less education at baseline		Wife more than yr 12 education at baseline	
CHS	0.0451 (0.0392)	0.0360 (0.0444)	-0.0253 (0.0377)	-0.0693* (0.0410)
CHS X Male	-0.0431 (0.0665)	-0.0529 (0.0708)	0.0208 (0.0554)	0.0719 (0.0625)
Observations	3,278	3,278	4,366	4,366

Standard errors clustered at the couple level in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. All regressions include all controls.

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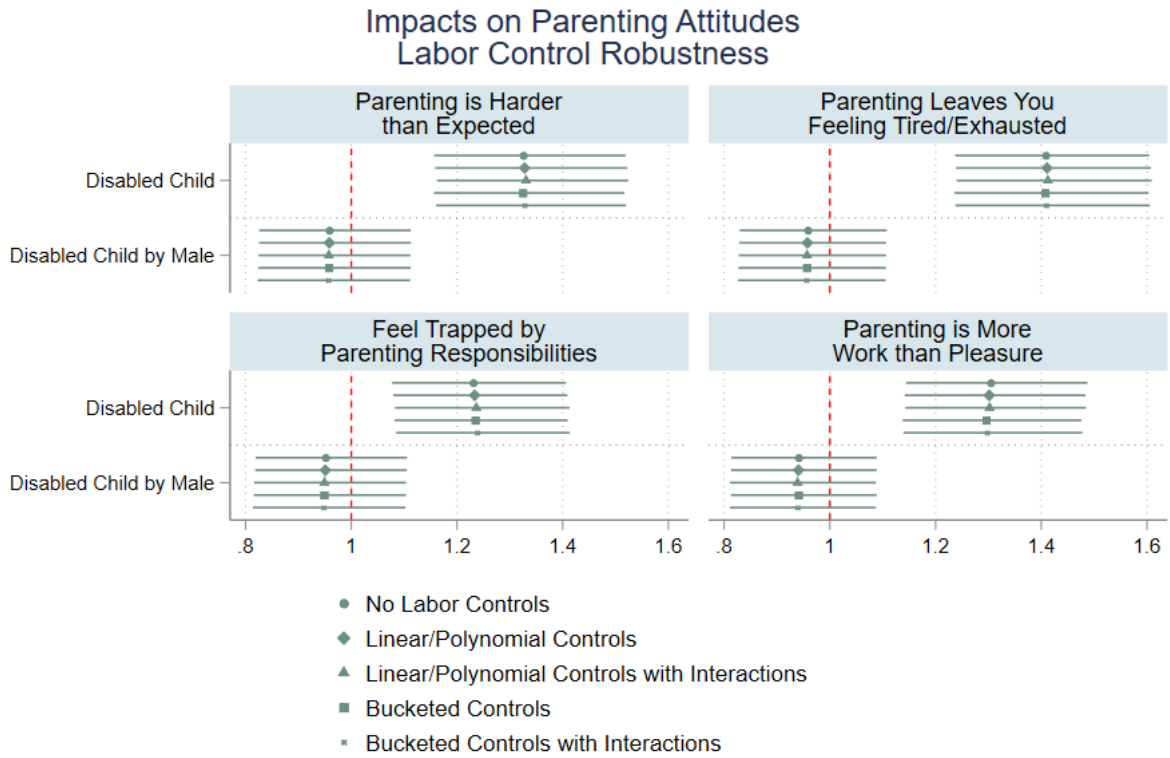
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# Appendix

Coefficient Plots for ordered logit labor control robustness



### Impacts on Relationship Satisfaction Labor Control Robustness



### Impacts on Housework Division Labor Control Robustness

