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Mothers' and Fathers' Work Hours, Child Gender, and Behavior in Middle Childhood

This study examined the association between typical parental work hours (including nonemployed parents) and children's behavior in two-parent heterosexual families. Child behavior was measured by the Child Behavior Checklist (CBCL) at ages 5, 8, and 10 in the Western Australian Pregnancy Cohort (Raine) Study (N = 4,201 child-year observations). Compared to those whose fathers worked

fewer hours per week, children whose fathers worked 55 hours or more per week had significantly higher levels of externalizing behavior. This association was not explained by father-child time during the week, poorer family functioning, or overreactive parenting practice. Further, when stratifying the analysis by child gender, this association appeared to exist only in boys. Mothers' work hours were unrelated to children's behavioral problems. The role of parent and child gender in the relationships between parental work hours and children's behavioral problems, together with mediating factors, warrants further investigation.

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Although the average amount of time parents spend with their children has increased in recent years (Bianchi & Milkie, 2010), the quantity and quality of parent-child time is still raised as a concern. Studies in the United States and Australia point to a desire among parents to work fewer hours and spend more time with their children and a wish among children that parents would come home from work less tired and stressed (Bianchi & Milkie; Galinsky, 1999; Pocock & Clarke, 2005).

Despite continuing concerns of parents and children, the extent to which long parental work hours pose a problem for children and how they

may do so remain unclear. It is assumed that time with children is compromised when parents work long hours, but few studies have tested this empirically. Other research usually examines mothers' work hours in isolation from fathers' work hours. Mechanisms linking parental work hours to child outcomes are rarely tested, and virtually all studies assume that girls and boys will show the same pattern of outcomes to their mothers' or fathers' time constraints. We address these limitations and focus our analysis on boys' and girls' emotional and behavioral problems, rates of which, in affluent Western countries, remain high (10% to 20% of children at some point in time; Kieling et al., 2011). Emotional and behavioral problems in childhood can set a trajectory of psychopathology later in life (Repetti, 2005), and via poorer literacy, numeracy, and school achievement, constrain later employment prospects and life chances in adulthood (Li, McMurray, & Stanley, 2008; Maggi, Irwin, Siddiqi, & Hertzman, 2010).

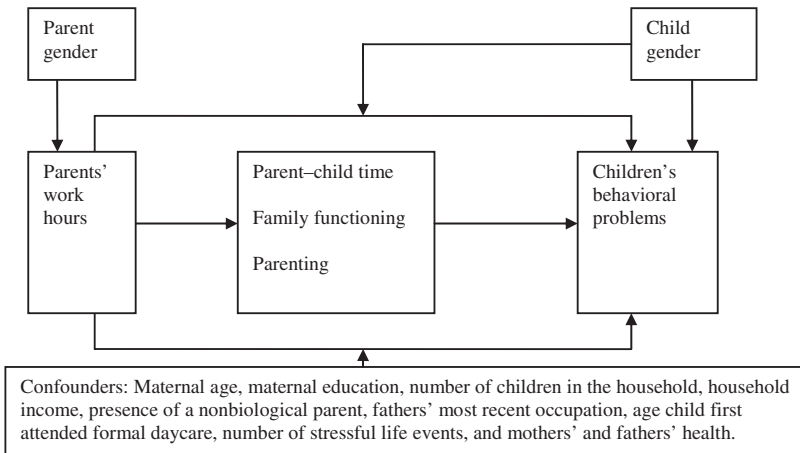
Our aim is to extend current knowledge about the relationship between both mothers' and fathers' work hours in two-parent heterosexual families and child behavior. Our paper makes the following contributions. First, we consider typical work patterns within two-parent families; therefore, we include nonemployed parents and take into account the gender patterning of working hours found in Australia (mothers tend to occupy jobs with short part-time hours and fathers almost exclusively work full-time, often with long hours; Charlesworth, Strazdins,

O'Brien, & Sims, 2011). It is important to note that the aim of this paper is not to directly compare the effects of mothers' and fathers' work hours on child behavior, but to examine whether parental work hours affect boys and girls differently. Second, we test three plausible mediating mechanisms linking work hours to child behavior: reduced parental time during the week, ineffective (overreactive) parenting, and poorer family functioning. Third, we examine child gender as a moderating factor (see conceptual model in Figure 1). Gender identity and gender distinctions in the parent-child relationship (especially same-gender parents and children) are central to this paper. Employment and care within families is also imbued with gendered meanings, yet these gendered links between work hours and children are rarely explored. We focus on emotional and behavioral problems during middle childhood—a time when children consolidate a sense of self and gender identity while also remaining highly dependent on their families (Belsky, 2010).

THEORETICAL FRAMEWORK

Research on the way the work-family interface influences child outcomes draws on Bronfenbrenner's (2005) broader ecological framework, placing family functioning and interactions between parents and children in the central mediating role (for reviews, see Perry-Jenkins, Repetti, & Crouter, 2000; Repetti, 2005). Our three hypothesized mechanisms have

FIGURE 1. CONCEPTUAL MODEL.



not been examined in previous research on parental work hours and child behavior, although spillover of stress has been widely researched in studies of parental work conditions, work schedules, and work stress (Perry-Jenkins et al.; Repetti). We further hypothesized that both parent and child gender are critical to understanding the linkages. Figure 1 illustrates our conceptual model. It proposes that parental work hours influence children's behavioral problems via parent-child time, parenting, and family functioning (H1 and H2); nevertheless, parent and child gender temper this association. Child gender not only influences the degree and type of behavioral problem likely to be affected by parents' work hours, but also influences which parent's work hours may matter most (H3).

Evidence Linking Parental Work Hours and Child Behavior

Meta-analysis of almost 50 years of research found few effects on children of maternal employment in the early years. One exception was that children showed more externalizing problems when mothers worked full-time in the child's first year, compared to children of nonemployed mothers (Lucas-Thompson, Goldberg, & Prause, 2010), an association that may be further confined to full-time work in the first 6 months (Brooks-Gunn, Han, & Waldfogel, 2010). Beyond the preschool years, evidence suggests that contextual and mediating factors such as income, family environment, school, and neighborhood factors modify any relationship between maternal work hours and child behavior. For example, in low-income families, positive effects of maternal employment are apparent in young children, whereas some negative effects have been found in more affluent families (Bianchi & Milkie, 2010; Lucas-Thompson et al., 2010). Furthermore, behavioral problems are generally less common in families that can afford good-quality after-school programs or more common if there are disruptive peer and neighborhood influences and children are left unmonitored (Zaslow, Jekielek, & Gallagher, 2005).

Compared to maternal work hours, far less is known about the links between paternal work hours and child behavior, although poorer outcomes have been observed for children when fathers are unemployed rather than employed

(Crouter & McHale, 2005; Lamb, 2010; Perry-Jenkins et al., 2000). Evidence from previous research on work-to-family spillover implies that any association between fathers' long work hours and child emotional and behavioral problems is mediated by negative work-to-family spillover, perceived role overload, personal stress, and father-child conflict (Crouter, Bumpus, Head, & McHale, 2001; Crouter, Bumpus, Maguire, & McHale, 1999; Galambos, Sears, Almeida, & Kolaric, 1995; Kinnunen, Gerris, & Vermulst, 1996; Sallinen, Kinnunen, & Rönkä, 2004; Sallinen, Rönkä, Kinnunen, & Kokko, 2007; Stewart & Barling, 1996; Voydanoff, 2004). This research is mostly based on small and nonrandom samples, is cross-sectional in design, and predominantly focuses on adolescents. Only two of these cited studies (Crouter et al., 2001; Voydanoff) specifically examined fathers' work hours. Neither has this research empirically tested our plausible mediating factors linking both mothers' and fathers' work hours to child behavior.

One of the few studies that has examined mothers' and fathers' hours together found that neither mothers' nor fathers' overtime hours (>40 hours per week) were associated with behavioral problems. It was only when both parents worked overtime or worked less than full-time hours that more behavioral problems became evident in 4-6-year-old children (Parcel & Menaghan, 1994). This study used representative data from the National Longitudinal Study of Youth (NLSY). In subsequent analysis of NLSY children when aged 6-8, fathers' overtime was linked with more problem behavior in 6-8-year-old children only if there was a new child in the family. Arguably, the cutoff for overtime hours was not specific enough to detect behavioral differences associated with longer work hours.

Hypothesis 1. The first step of our analysis seeks to identify the influence of mothers' and fathers' work hours (including nonemployed parents) on child behavior, by testing them simultaneously in the same model. We begin with a pooled analysis including both boys and girls in the same model in order to directly test child gender differences in the effect of parental work hours. On the basis of the literature and the relatively advantaged status of our sample, we hypothesize a small detrimental relationship between long work hours of both parents, but especially father's work hours, and child behavioral problems (H1).

Evidence on Mediating Mechanisms

Time spent with children, especially uninterrupted time, enables the building of good parent–child relationships (Roeters, Van Der Lippe, & Kluwer, 2010). Long working hours may limit overall parent–child time and reduce parental time in developmentally important activities (e.g., playing games, teaching, talking, and discipline), especially during the week. Parents who work long hours are less likely to engage in their school-aged child’s learning, less able to help children overcome social and learning difficulties, and less likely to provide opportunities for extracurricular activities or peer interactions (Belsky, 2010; Crouter & McHale, 2005). Parent–child time varies by parent gender. Mothers tend to spend more time overall with children than fathers, even when working full-time hours (Craig, 2006; Gauthier & DeGusti, 2012). Mothers spend proportionally more time than fathers in the physical care of children, but fathers spend proportionally more time in interactive care and recreation (Craig, 2006; Lamb, 2010). Employed mothers tend to “protect” time with their young children by reallocating their time from other activities (Bianchi, Robinson, & Milkie, 2006; Craig, 2007); the evidence is more equivocal with respect to employed fathers. Research indicates that although overall father–child time is reduced as work hours increase, fathers may preserve recreation time, especially on the weekend (Baxter, 2007, 2009; Roeters, Van Der Lippe, & Kluwer, 2009; Yeung, Sandberg, Davis-Kean, & Hofferth, 2001). Active, regular father engagement is associated with reduced behavioral problems among boys and fewer psychological problems in young women (Sarkadi, Kristiansson, Oberklaid, & Bremberg, 2008); such impacts may be long lasting (Flouri & Buchanan, 2002).

Research shows that positive child outcomes are consistently associated with high levels of parental warmth and nurturance regardless of whether the interaction is with the mother or father (Lamb, 2010). In the context of middle childhood, tired or stressed parents may be more reluctant to relinquish the typical hierarchical parent–child relationship established in early childhood, or alternatively may adopt a permissive or uninvolved style of parenting (Laursen & Collins, 2009; Zaslow et al., 2005). Both insufficient parental monitoring (Dishion & McMahon, 1998) and high levels of parental coercion and

control are associated with emotional and behavioral problems among school-aged children (Laursen & Collins, 2009; Rothbaum & Weisz, 1994). Small empirical studies have linked parents’ subjective experiences of work stress and overload or interrole conflict to adolescent well-being via the quality of parent–adolescent relationships (Crouter et al., 1999, 2001; Galambos et al., 1995; Sallinen et al., 2004) and ineffective parenting practices (MacEwen & Barling, 1991; Stewart & Barling, 1996). On the whole, evidence points to parenting quality as a potential mechanism linking parental work hours to child behaviors.

A second spillover mechanism of parental work hours may be through impacts on relationships and processes within the whole family, not only those associated with parent–child interactions. When parents work long hours, there is greater work–family conflict (Bianchi & Milkie, 2010), and subjective role overload is associated with less positive marital relationships (Crouter et al., 2001). Close relationships require sufficient time to give and receive support, build intimacy, or make repairs after conflict arises (Galinsky, 1999), and this is true for family functioning. Family decision making, planning, and time together, as well as warmth and support between parents, symbolize family care and togetherness, providing the emotional context for children’s developing sense of self. Thus erosion of family functioning forms our third proposed mediating mechanism.

Hypothesis 2. We hypothesize that any detrimental association between parental working hours and child behavior is due to reduced parent–child time during the week, higher levels of overreactive parenting, and family dysfunction (H2).

Child Gender as a Moderating Factor

There are many instances of gender differences in the timing of children’s physical, cognitive, social, and emotional development. Girls are more likely than boys to regulate their attention and inhibit their impulses; boys are more likely to favor high-intensity pleasure such as rough-and-tumble play (Else-Quest, Hyde, Goldsmith, & Van Hulle, 2006). There is abundant evidence that emotional and behavioral problems differ by child gender. For example, forms of direct aggression are more common among boys

than girls and are strongly associated with conduct problems, emotional dysregulation, and problems with peers (Card, Sawlini, Stucky, & Little, 2008). Early pubertal transition among girls can be particularly challenging for their self-esteem (Belsky, 2010), and the prevalence of depression is much higher in girls from puberty onward (Anderson & Tiecher, 2008). Although these disorders involve genetic and other physiological mechanisms, family socioeconomic disadvantage, parental mental illness, family dysfunction, and stressful life events are also key risk factors (Anderson & Tiecher; Copeland, Shanahan, Costello, & Angold, 2009).

The period of middle childhood that precedes puberty is a time when children consolidate their gender identity; the primary context for this is the family home (for an overview, see Coltrane & Adams, 2008, pp. 167–199). As parents tend to be more involved with same-gender children (especially fathers and sons) it is plausible that during middle childhood, the absence of the same-gender parent due to long hours at work has a more detrimental effect than absence of the opposite-gender parent. That is, there may be gender-linked pathways between parent time and child outcomes (Lamb, 2010; Laursen & Collins, 2009; Raley & Bianchi, 2006). Research in small studies of dual-earner families with school-aged (preadolescent) children indicates that high parental work demands are associated with poor monitoring or less time spent with boys, more so than girls (Bumpus, Crouter, & McHale, 1999; Greenberger, O'Neil, & Nagel, 1994). Poor monitoring has been associated with conduct problems among sons (aged 9–12) but not daughters (Repetti, 2005, citing Crouter, MacDermid, McHale, & Perry-Jenkins, 1990). Although small, these studies indicate likely gender differences in the relationship between parental work hours and child outcomes during middle childhood.

Hypothesis 3. Both the patterning of parental work hours and the nature of parent–child relationships are profoundly gendered. We consider parental work hours in terms of the typical, gendered patterning normative in Australia. Because middle childhood represents a critical period of development in gender identity, we hypothesize that fathers' long work hours have a stronger association with boys' than girls' behaviors, but mothers' long work hours have a larger impact on girls' than boys' behaviors (H3).

Control Variables

Many factors are linked with both parental work hours and child behavior, thereby confounding the associations. Parental mental health is a strong correlate of child mental health (Connell & Goodman, 2002) and can select parents out of employment or into part-time work. Exposure to multiple stressful life events in the family, including marital disruption and repartnering, may also alter work patterns and influence parental and child mental health. Jobs associated with long work hours tend to be concentrated in occupations of higher status, such as managerial and professional positions (Drago, Black, & Wooden, 2005), occupied by those with higher education levels, and often bring benefits in terms of greater income and parental skills—both positive resources for child development. Maternal age and family size are further potential confounders influencing mothers' employment decisions and resources available to children. Finally, we adjust for child-care attendance, as early and extensive exposure to nonrelative care is associated with more externalizing problems into the school years (Vandell et al., 2010) as well as long work hours.

METHOD

Study Population

Data were obtained from the Western Australian Pregnancy Cohort (Raine) Study, a sample of 2,900 pregnant women recruited at 16–20 weeks' gestation from the public antenatal clinic at King Edward Memorial Hospital (KEMH) and nearby private clinics in Perth from May 1989 to November 1991. The final cohort comprised 2,868 live births. All data used in the study were based on report via self-completed questionnaire by the primary caregiver, usually the mother. Details of the Raine study enrollment methodology have been published elsewhere (Newnham et al., 2004). The Human Ethics Committees at KEMH, Princess Margaret Hospital, or both approved the protocols. The original cohort overrepresented disadvantaged families, as they were recruited through a tertiary referral center, but attrition diminished the number of respondents among those with low SES before the third year (Li, Kendall, et al., 2008).

This study is based on an unbalanced panel sample. There were 5,093 child-year observations in two-parent heterosexual families at ages 5, 8, and 10. Either mothers' or fathers' employment status was missing for 56 (<1%) observations. This left 5,037 observations in two-parent families with complete employment data, reducing to 4,661 observations after accounting for missing data on child behavior and parental work hours (described below). If the child lived in a single-parent family at any follow-up time, he or she was not included in that year's observations. Of the original birth cohort, 57% were included in the sample at age 5, 54% at age 8, and 52% at age 10, moderately overrepresented by higher SES families. After further sample loss due to missing values on control variables (no more than 2% per variable), the primary analytical sample was reduced to 4,201 child-year observations. Compared to those not in this study sample from the original cohort (excluding families with single parents), significantly higher proportions of the 4,201 child-year observations came from families whose mother at 18 weeks gestation had at least completed high school (70% in the original cohort; 56% in the study sample); who were employed (61%; 52%), or who had a gross annual family income \geq \$36,000 (43%; 29%).

Outcome Variables: Child Behavior (Time Varying)

The parent (mostly mother)-reported Child Behavior Checklist (CBCL) for ages 4–18 (CBCL/4–18) measured child behavior at ages 5, 8, and 10 (Achenbach, 1991). The CBCL is designed to measure variability in child behavior in a normal (nonclinical) population. The CBCL demonstrated good test-retest reliability, good sensitivity (83% overall), and reasonable specificity (67% overall) compared to a clinical psychiatric diagnosis in a Western Australian clinical calibration (Zubrick et al., 1997). Within two-parent families with complete employment data, just 43 observations (<1%) were lost to follow-up due to missing CBCL data. The CBCL instrument produced a *z*-score for two broad groups of syndromes, internalizing (social withdrawal, somatic complaints, and anxiety/depression), and externalizing problems (delinquent and aggressive behavior), and for total behavioral problems (both syndrome groups and social problems, thought problems,

and attention problems). For this analysis, the CBCL *z*-score was computed based on the whole Raine Study sample. The CBCL *z*-score was analyzed as a continuous outcome for total, internalizing, and externalizing problems, with higher scores indicating more emotional and behavioral problems within each domain (Achenbach).

Predictor Variables: Parental Work Hours (Time-Varying)

Primary respondents reported their current paid employment status, usual work hours in all jobs, and those of their partner at each follow-up. Mothers and fathers were identified by a question about who had completed the questionnaire. At child ages 5, 8 and 10, two variables were derived representing the typical distribution of maternal employment in Australia (not employed, 1–34 hours per week, and 35+ hours per week) and the longer full-time hours of fathers (not employed, 1–34 hours per week, 35–44 hours per week, 45–54 hours per week, and 55+ hours per week); for example, see Baxter (2007) and Baxter (2009). Consistent with the Australian Bureau of Statistics classification, full-time employment was defined as 35 or more hours per week (Australian Bureau of Statistics, 2007). Categorical variables were preferred over continuous work-hour measures because prior research indicates that work hours are related to child behavioral outcomes when either too few or too long, that is, a curvilinear association (Brooks-Gunn et al., 2010; Parcel & Menaghan, 1994). There were 240 (5%) missing observations on work hours for employed fathers and 93 (2%) for employed mothers.

Confounding Variables

Time-invariant variables. Adjustment was made for maternal age as measured at child's birth. Based on univariate analysis with CBCL outcomes, maternal education (measured in pregnancy) was recoded to three categories to best capture the variations in CBCL outcomes: a = *did not complete high school*, b = *high school completion (year 12), trade or college education*, and c = *university or professional education*. Information on the age at which children first attended formal child care was collected at the age 5 follow-up and coded as

≤ 12 months, 1–3 years, and ≥ 3 years, or otherwise, if they did not attend. A dichotomous variable was created for each parent indicating whether he or she had a health problem of a permanent or long-term nature (i.e., more than 6 months) or had ever been treated for an emotional or mental health problem as reported by the primary caregiver at either the child's age 8 or age 10 follow-up. Mothers' health problems always referred to the biological mother whereas fathers' health problems referred to the resident father.

Time-varying. Within two-parent families, children were classified as living in either a biological-parent family or a step-, blended or foster-parent family. The number of dependent resident children at each follow-up was controlled for as a categorical variable (1, 2, 3+). Data on the (resident) father's occupation in his current main job were gathered at each follow-up and grouped into nine broad categories according to the Australian Standard Classification of Occupations (Australian Bureau of Statistics, 1997), then further collapsed into five categories: a = *manager*, b = *professional*, c = *paraprofessional, clerical or sales*, d = *trade*, and e = *plant operator or laborer*. Where current occupation was not available, data on the most recently recorded fathers' occupation from previous waves were used. Information about gross annual household income was collected with categorical responses that varied in range and number of categories across the years (from four categories at child age 5 to 12 categories at age 10). For consistency across years, each variable was recoded to proportionally similar categories of relatively low, middle, or high income. At each follow-up, primary caregivers reported their experience of stressful life events (12 items) in the past 12 months (Tennant & Andrews, 1976). The type of stressful event included pregnancy problems, death of a close friend or relative, separation or divorce, involuntary job loss by self or partner, money problems, and residential moves. Finally, the number of stressful life events was summed and used as a 4-category variable (0, 1, 2, 3+).

Mediating Variables

Time-invariant. At child age 10 only, primary caregivers were asked to report, on average, how much time each day from Monday to

Friday (5-category variable from 1 = *less than 1 hour* to 5 = *more than 5 hours*) that they and their resident partners spent caring for and interacting with the study child. At child age 10, the primary caregiver (usually the mother) also responded to a set of 30 items about her own parenting with the study child in the past 2 months based on the scale of dysfunctional discipline, originally designed for use among young children (Arnold, O'Leary, Wolff, & Acker, 1993). The scale was later validated and subscales modified for use in middle childhood, producing two subscales: overreactivity and laxness (Prinz, Onghena, & Hellinckx, 2007). Because the overreactivity subscale was found to be correlated more strongly with parental stress and child behavior than laxness in the Prinz study, it was used in the present study. Greater overreactivity was represented by items that showed mothers more likely to be picky when stressed, to get into an argument or lecture their child, to get angry or frustrated, or to use bad language, physical punishment, or insult the child when he or she misbehaved. In this study, the overreactivity subscale was based on 9 items (range 1–6, $M = 2.61$, $SD = 0.82$) with good internal reliability ($\alpha = .765$); higher scores indicated greater maternal reactivity. Once missing observations were removed from confounding variables, there were 282 and 217 missing observations for fathers' and mothers' time with the child, 7% and 5%, respectively, and 240 missing observations (6%) for the parenting scale. Most of the missing observations were due to sample attritions at age 5 and 8 follow-ups, with only <1% missing cases due to incomplete variable response at age 10. Thus, multiple data imputation for these variables was not appropriate.

Time-varying. Family functioning was measured at each follow-up by the 12-item general functioning scale of the McMaster Family Assessment Device (FAD) as reported by the primary caregiver. The scale has high-level internal consistency and validity in distinguishing between families with clinical- and nonclinical-level problems (Byles, Byrne, Boyle, & Offord, 1988). Internal reliability of the FAD in this study at ages 5, 8, and 10 was high ($\alpha > .89$). Items reflect a family's ability in planning, decision-making, problem-solving and support, and individual acceptance and expression. The scale ranges from 1 to 4 ($M = 1.68$, $SD = 0.46$),

with higher scores indicating unhealthy family functioning.

Statistical Analysis

Linear mixed-effects models were used to examine the impact of parental work hours on total behavioral, internalizing, and externalizing problems (CBCL *z*-score). This approach allowed temporal changes in both the predictor and outcome variables to be modeled, adjusting for time-varying and time-invariant control variables. Cases with missing time-invariant variables were excluded from the entire analysis, whereas cases with missing data on time-varying variables were dropped only in the year for which data were missing. The first model estimated the effect of parental work hours on the three CBCL outcome variables, adjusting for sociodemographic factors, life stress, and parental health as possible confounders (Model 1; $N = 4,201$ observations). To test for mediation effects, fathers' and mothers' time with the child (separately), family functioning, and parenting practice were then added (Model 2; $n = 3,815$ observations; 91% of sample). Missing observations in Model 2 came from children of a lower SES on several measures. The modifying effect of child gender in each model was tested in two different ways: by the use of interaction terms and by running separate models for boys and girls. PASW Statistics 18 was used for analysis.

FINDINGS

The distribution of the outcome variables, the main predictors, and other variables is summarized in Table 1. Girls had lower mean levels of total behavioral problems and externalizing behavior, but they had higher levels of internalizing behavior than boys. Among employed fathers, the distribution of work hours was consistent over time with just under half working long hours (45+ hours per week). The proportion of mothers working full-time hours (35+ hours per week) increased from 12% at child age 5 to 17% at age 10, when the majority worked part-time.

Bivariate associations showed moderate correlations between fathers' work hours and fathers' time with children during the week ($r_s = -.180$) and between mothers' work hours and mothers' time with children during the week

($r_s = -.098$). With similar work hours, mothers' time with children averaged more than fathers' time with children. For example, at standard weekly full-time hours (35–44 or 35+ hours per week for mothers), 59% of fathers and 82% of mothers spent at least 3 hours per day with their child during the week. Contrary to what was expected, there was mostly no significant relationship between parental work hours and either levels of family functioning or mothers' over-reactive parenting. The one exception was the lower family functioning (higher mean score) observed in families with a nonemployed father. Because of the originally hypothesized relationships, these two variables were retained in the mediation models. Parent–child time during the week was significantly related to behavioral problems (total, internalizing, and externalizing), although predominantly the significance of each association was due to much higher levels of problem behavior when either parent averaged one hour or less each week, compared to more hours. Few mothers spent such little time with their child (3% compared to 18% of fathers—see Table 1).

Relationship Between Parental Work Hours and Child Behavior

The first hypothesis (H1) was concerned with a possible relationship between parental work hours and child behavior in a pooled analysis of boys and girls (Table 2—Model 1). The results show that levels of externalizing behavior were highest when fathers worked 55 hours or more per week. Compared to children of fathers working 55 hours or more per week, those with fathers working 45–54 or 1–34 hours per week were less likely to have externalizing problems, $\beta = -.08$, 95% CIs $[-.14, -.02]$, $p < .01$, and $\beta = -.12$, 95% CIs $[-.22, -.03]$, $p < .05$, respectively. Compared to children of fathers working 55 hours or more per week, those with fathers who were not employed or working 1–34 hours per week had significantly lower levels of total behavioral and internalizing problems. In contrast, child behavior was unrelated to mothers' work hours.

Table 1. Distribution of Sample Variables for Families With Complete CBCL, Employment Status, and Work Hours Data
(N = 4,201 Child-Year Observations)

Variable	Time Varying		
	Age 5 (n = 1,439)	Age 8 (n = 1,403)	Age 10 (n = 1,359)
CBCL total problems z-score— M (boy, girl) ^a	(-.05, -.21)	(-.03, -.17)	(-.03, -.20)
CBCL internalizing z-score— M (boy, girl) ^a	(-.10, -.08)	(-.12, -.02)	(-.10, -.06)
CBCL externalizing z-score— M (boy, girl) ^a	(-.01, -.25)	(.01, -.22)	(-.01, -.23)
		%	
Family is step or blended	7.5	9.8	13.2
Fathers' work hours per week			
Not employed	7.4	7.7	6.2
1–34	5.3	6.3	9.0
35–44	44.1	42.3	41.3
45–54	24.4	23.7	27.4
55+	18.8	19.9	16.2
Mothers' work hours per week			
Not employed	49.2	42.5	29.1
1–34	38.7	44.4	53.6
35+	12.1	13.1	17.4
Fathers' most recent occupation			
Manager	17.2	19.1	20.4
Professional	24.1	22.7	22.9
Paraprofessional/clerical or sales	15.4	15.5	15.2
Trade	22.5	20.5	20.9
Plant operator or laborer	20.8	22.2	20.6
Number of children			
1	10.9	12.8	19.8
2	50.7	47.8	45.0
3 or more	38.4	39.3	35.2
Household income ^b			
Low	13.8	15.0	13.0
Medium	30.7	33.6	39.5
High	55.5	51.3	47.5
Number of stressful life events			
None	35.0	36.9	31.2
1	29.2	32.0	29.6
2	18.5	17.0	19.2
3 or more	17.4	14.0	20.0
Family functioning ^c —M (SD)	1.61 (0.44)	1.69 (0.45)	1.68 (0.45)
		Time invariant	
Child is a girl	48.4		
Mothers' age—M (SD)	29.0 (5.4)		
Mothers' education at child's birth			
Incomplete high school	31.2		
Year 12, trade, or college	42.8		
Tertiary	26.0		

Table 1. *Continued.*

Variable	Time Varying		
	Age 5 (<i>n</i> = 1,439)	Age 8 (<i>n</i> = 1,403)	Age 10 (<i>n</i> = 1,359)
First formal child care ^d			
First 12 months	13.1		
Age 1 up to 3 years	26.8		
Age 3 years or older	12.5		
Did not attend in first 5 years	47.6		
Mothers' health problem ^e	45.3		
Fathers' health problem ^e	34.5		
Fathers' time with child (weekday) ^f			
About 1 hour or less	18.1		
About 1 – 2 hours	24.0		
About 3 – 5 hours	33.1		
More than 5 hours	18.0		
Mothers' time with child (weekday) ^f			
About 1 hour or less	3.2		
About 1 – 2 hours	9.8		
About 3 – 5 hours	36.2		
More than 5 hours	45.6		
Overreactive parenting ^g — <i>M</i> (<i>SD</i>)	2.61 (0.83)		

Note. ^aScores represent mean *z*-score for total, internalizing, and externalizing behavior as measured by the Child Behavior Checklist, thus *M* deviates from 0 due to gender difference. ^b“Low” income is < \$25,000 at child age 5, < \$30,000 at child ages 8 and 10. ^cMeasured by McMaster Family Assessment Device General Functioning Scale. ^dAttendance at formal or family daycare up to child age 5. ^eA long-term health condition or ever had a mental health or emotional issue as reported at child ages 8 or 10. ^fAverage time reported by primary caregiver at child age 10 (7% and 5% missing observations for fathers' and mothers' time with child, respectively). ^gOverreactive parenting of primary caregiver (usually the mother) as reported at child age 10 (6% missing observations).

Parental Time With Children, Family Functioning, and Parenting as Mediating Factors

We hypothesized that any negative association between long parental working hours and more behavioral problems could be due to reduced parental time and higher levels of overreactive parenting or family dysfunction (H2). Neither mothers' time nor fathers' time spent with children on the weekday related significantly to child behavior (Table 2—Model 2, showing adjustment for fathers' time). There was no reduction in the size of the effect of fathers' work hours on externalizing behaviors in Model 2, indicating that none of the three hypothesized variables mediated the association. With respect to internalizing behaviors, the association with fathers' work hours was no longer significant (in particular, the lower risk associated with having a nonemployed father or a father working part-time hours compared to 55 hours or more).

These results suggest that the differences in internalizing behavior between these work-hour categories were partly due to the mediating factors.

Child Gender Interaction

We hypothesized (H3) that absence of a same-gender parent due to relatively long work hours may have a stronger association with child behavior than absence of an opposite-gender parent. Tests for global interactions between fathers' and mothers' work hours and child gender were not statistically significant. Nevertheless, subgroup analysis by child gender revealed clear gender differences (Table 3). Fathers' work hours were significantly associated with externalizing behavior in boys (*p* = .042). Boys whose employed fathers worked fewer than 55 hours per week had lower levels of externalizing problems compared to boys whose fathers worked such long hours; this association

Table 2. Linear Mixed-Effects Models Showing the Association Between Parental Work Hours and Behavioral Problems at Ages 5 to 10 (N = 4,201 Observations for Model 1 and N = 3,815 Observations for Model 2)

Variable	Model 1		Model 2	
	Adjusted for confounders		+ Adjusted for mediators	
	β	95% CI	β	95% CI
Total behavioral problems				
Mothers' work hours per week				
Not employed	.04	[-.03, .12]	.05	[-.02, .13]
1-34 (ref = 35+)	.02	[-.04, .09]	.04	[-.03, .11]
Fathers' work hours per week				
Not employed	-.10 [†]	[-.20, .01]	-.07	[-.18, .04]
1-34	-.12*	[-.21, -.02]	-.10*	[-.20, -.00]
35-44	-.04	[-.10, .02]	-.04	[-.10, .02]
45-54 (ref = 55+)	-.04	[-.10, .02]	-.03	[-.09, .03]
Fathers' time with child per week				
About 1 hour or less			-.02	[-.14, .09]
1-2 hours			-.03	[-.14, .08]
3-5 hours (ref is > 5 hours)			-.06	[-.16, .04]
Family functioning ^a			.16***	[.10, .22]
Overreactive parenting ^b			.30***	[.26, .35]
Internalizing behavior				
Mothers' work hours per week				
Not employed	.06	[-.02, .14]	.08 [†]	[-.01, .16]
1-34 (ref = 35+)	.04	[-.04, .11]	.06	[-.02, .14]
Fathers' work hours per week				
Not employed	-.14**	[-.26, -.02]	-.10	[-.22, .03]
1-34	-.11*	[-.22, .00]	-.09	[-.20, .03]
35-44	-.04	[-.11, .03]	-.04	[-.12, .03]
45-54 (ref = 55+)	-.02	[-.09, .05]	-.00	[-.07, .07]
Fathers' time with child per week				
About 1 hour or less			-.04	[-.16, .08]
1-2 hours			-.01	[-.12, .10]
3-5 hours (ref is > 5 hours)			-.06	[-.16, .05]
Family functioning ^a			.15***	[.08, .21]
Overreactive parenting ^b			.24***	[.19, .28]
Externalizing behavior				
Mothers' work hours per week				
Not employed	.05	[-.02, .12]	.06	[-.01, .13]
1-34 (ref = 35+)	.03	[-.03, .10]	.05	[-.02, .11]
Fathers' work hours per week				
Not employed	-.06	[-.17, .04]	-.04	[-.15, .07]
1-34	-.12*	[-.22, -.03]	-.13**	[-.23, -.03]
35-44	-.05	[-.11, .01]	-.06 [†]	[-.12, .00]
45-54 (ref = 55+)	-.08**	[-.14, -.02]	-.08*	[-.14, -.01]
Fathers' time with child per week				
About 1 hour or less			-.03	[-.15, .08]
1-2 hours			-.06	[-.16, .06]
3-5 hours (ref is > 5 hours)			-.05	[-.15, .05]
Family functioning ^a			.15***	[.10, .21]
Overreactive parenting ^b			.33***	[.29, .38]

Note. Models 1 and 2 adjusted for maternal age and maternal education at birth of study child, number of children in the household, household income, presence of a nonbiological parent, fathers' most recent occupation, age child first attended formal daycare, number of stressful life events, and mothers' and fathers' health.

^aAn increase in scores indicates a decline in family functioning. ^bAn increase in scores indicates more overreactive parenting of the primary caregiver (usually the mother).

[†] $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 3. *Linear Mixed-Effects Models Showing the Association Between Parents' Work Hours and Behavioral Problems of Boys (n = 2,169 observations) and Girls (n = 2,032 observations) Aged 5 to 10*

Variable	Girls β	Boys β
Total behavioral problems		
Mothers' work hours per week		
Not employed	.05	.02
1-34	.05	-.01
35+ (ref)	—	—
Fathers' work hours per week		
Not employed	-.08	-.10
1-34	-.05	-.17*
35-44	.02	-.08 [†]
45-54	-.01	-.06
55+ (ref)	—	—
Internalizing behavior		
Mothers' work hours per week		
Not employed	.10	.01
1-34	.09	-.01
35+ (ref)	—	—
Fathers' work hours per week		
Not employed	-.17	-.09
1-34	-.07	-.14 [†]
35-44	-.02	-.05
45-54	-.00	-.03
55+ (ref)	—	—
Externalizing behavior		
Mothers' work hours per week		
Not employed	.06	.03
1-34	.05	.01
35+ (ref)	—	—
Fathers' work hours per week		
Not employed	-.05	-.07
1-34	-.02	-.22**
35-44	-.00	-.09*
45-54	-.06	-.09*
55+ (ref)	—	—

Note. Models adjusted for maternal age and maternal education on birth of study child, number of children in the household, household income, presence of a nonbiological parent, fathers' most recent occupation, age child first attended formal daycare, number of stressful life events, and mothers' and fathers' health.

[†] $p < .10$. * $p < .05$. ** $p < .01$.

was not significant for girls. Likewise, the relationship between fathers' work hours and total behavioral problems appeared to occur only for boys, although the overall effect in the model was not statistically significant ($p = .176$).

DISCUSSION

Whereas prior research shows little overall relationship between mothers' working hours and child behavior, there is only limited comparable research on fathers' work time (Bianchi & Milkie, 2010; Crouter & McHale, 2005; Lucas-Thompson et al., 2010). This study examined the link between child behavior and both parents' work hours in two-parent heterosexual families during middle childhood, a period when children require substantial parental time and guidance in achieving independence, school success, and gender identity (Belsky, 2010). Results are broadly generalizable to somewhat more advantaged two-parent families with primary (elementary) school-aged children.

In respect to the first hypothesis, higher levels of externalizing behaviors were found for children whose fathers worked very long hours (55+ hours per week) compared to children whose fathers worked fewer hours. There was no detrimental association between mothers' full-time work hours and children's behavioral problems. With regard to the second hypothesis, no evidence was found that the association between fathers' work hours and child behavior was mediated by parent-child time during the week, overreactive parenting, or family functioning. Regarding the third hypothesis, the association between parental work hours and child behavior did not differ by child gender in the pooled analysis. But when stratifying by child gender, fathers' long work hours increased the risk of externalizing behaviors in boys but not in girls. Although effect sizes were small, a significant relationship between a sociostructural variable and child behavior adjusted for confounding variables is notable (Repetti, 2005).

Fathers' Work Hours and Child Behavior

The finding that fathers' long work hours are associated with higher levels of child behavioral problems is important, given the limited prior research specifically examining fathers' work hours. Results are inconsistent with prior research showing either no direct association or conditional links between fathers' work hours and child behavior (Gottfried & Gottfried, 2006; Parcel & Menaghan, 1994; Voydanoff, 2004). One reason for the inconsistency may be the specification of work hour categories

in this study, identifying common excessive work at 55 or more hours per week (16%–20% of fathers). In contrast, Parcel & Menaghan defined overtime work at 40 hours or more per week. Although Voydanoff hypothesized a curvilinear association between fathers' hours and adolescent problems, the association was not significant. Crouter and colleagues (2001) did categorize fathers' long hours by the sample distribution and found that long hours were only associated with lower quality father–adolescent relationships (boys and girls) in combination with subjective overload. The difference with our results may be the focus on adolescents in dual-earner families. So what might explain the association between fathers' work hours and children's externalizing behavior, especially significantly higher levels when fathers worked 55 or more hours per week, and more so among boys?

On the basis of the literature, we hypothesized that time spent with children during the week would act as a mediator in the association between fathers' work hours and child behavior, but our results did not support that proposition. Perhaps it is the quality of time rather than the quantity of time that matters, information that we lacked in our cohort data. Previous research suggests that having more disturbed interactions may influence child behavior via reduced quality of parent–child relationships (Roeters et al., 2010). At a bivariate level, behavioral problems were notably higher when fathers spent one hour or less with their child on weekdays (20% of fathers) but the differences in father–child time by fathers' work hours were small, a finding supported by other Australian (Baxter, 2007, 2009) and international (Roeters et al., 2009) studies. Father involvement is socially and culturally driven and linked with fathers' perceptions about their own parenting abilities and roles in the family (Lamb, 2010). There is evidence that fathers' involvement with their children is greater in societies that encourage gender equity (Gauthier & DeGusti, 2012). Therefore, some fathers may have a limited role, regardless of their work hours, but others will compensate for time lost due to their own or partner's employment (Crouter & McHale, 2005; Gottfried & Gottfried, 2006).

Our central thesis was that links between parental work hours and child behavior would be gendered, and in particular that children may have more problems when experiencing

inadequate or compromised time with the same-gender parent. A number of reasons have been suggested as to why boys in particular may be more sensitive to their fathers' long working hours than are girls. With respect to the particular temperamental or behavioral characteristics of boys (Card et al., 2008; Else-Quest et al., 2006) the association may be due to a lack of play typical in father–son relationships that could serve as a release for high energy levels or aggressive behavior. More generally, a lack of regular and positive engagement with fathers has been more strongly linked with behavioral problems among boys than girls (Sarkadi et al., 2008). An alternative explanation is the “rigid” enforcement of stereotypical gender play and interactions more common among fathers who spend less overall time with their children, compared to more involved fathers (Coltrane & Adams, 2008, p. 193), which may reinforce physical aggression and externalizing behavior in boys. Such explanations are speculative in the absence of information about specific parent–child shared activities, although Australian fathers working 55 or more hours per week have been found to spend significantly less time playing games with their children (Baxter, 2007).

Other explanations directly linking boys' externalizing behaviors with fathers' long work hours relate to the parenting behavior of fathers in respect to sons. It is possible that when fathers work very long hours, children are less well monitored after school, especially if mothers also work full-time hours. There is some evidence that preadolescent boys are less well monitored than girls when fathers have high work-related demands, including long hours, and as a consequence have more conduct problems (Bumpus et al., 1999; Repetti, 2005, citing Crouter et al., 1999). In this study, no information on fathers' monitoring or parenting behavior was available. A small body of research implies that long working hours coupled with subjective reports of demanding jobs or role overload may lead to more externalizing problems in children via harsh parenting (Greenberger et al., 1994; MacEwen & Barling, 1991; Stewart & Barling, 1996) or more conflicted parent–child relationships (Galambos et al., 1995). Harsh parenting by fathers is more strongly associated with childhood aggression in sons rather than daughters (Chang, Schwartz, Dodge, & McBride-Chang, 2003). Nevertheless, reverse

causality is also possible, whereby aggressive child behavior elicits poor caregiving, increasingly so during middle childhood through adolescence (Rothbaum & Weisz, 1994).

A further explanation relates to the indirect effect of fathers' work hours on mothers and disruption to family process. High activity levels or aggressive behavior of boys may be especially challenging for mothers without father support in the evening. When fathers work long hours, children may receive poorer quality maternal parenting (e.g., rejection, nonresponsiveness), a factor linked with greater externalizing behavior among preadolescent sons but not daughters (Rothbaum & Weisz, 1994). Alternatively, a mother's feeling of frustration or helplessness without father assistance with child care or housework may contribute to greater household chaos that, in turn, contributes to or exacerbates externalizing behavior in boys. Although we did not find a direct relationship between fathers' work hours and mothers' parenting or family functioning, little father-son time during the week (especially 1 hour or less) was linked with more overreactive parenting by mothers and poorer family functioning. Importantly, such interrelationships between fathers' working hours, parenting, and family functioning may be more pertinent in the context of low- to middle-income families if overall father involvement is lower and there are fewer financial resources to purchase time-saving services. Alternatively, the benefits to children of additional income provided by fathers in low-income families may outweigh any detrimental association with lack of paternal time or disrupted family process.

Although the association between fathers' long work hours and their daughters' behavior during middle childhood was minimal, this does not rule out " sleeper effects." As some longitudinal studies have shown, teenage girls have better relationships with their fathers if they had a good relationship with their fathers in middle childhood (Flouri & Buchanan, 2002) and fewer internalizing problems when fathers are present during this time (Pougnet, Serbin, Stack, & Schwartzman, 2011). Therefore, detrimental outcomes for girls with respect to lack of father involvement associated with long work hours may be expressed in other ways or become evident at a later stage (Sarkadi et al., 2008).

Mothers' Work Hours and Child Behavior

Our finding of no overall association between mothers' work hours and child behavior during middle childhood is consistent with prior research (Bianchi & Milkie, 2010; Crouter & McHale, 2005; Perry-Jenkins et al., 2000; Repetti, 2005; Zaslow et al., 2005). Mothers may select themselves into or out of the labor market for different reasons, and there is evidence that mothers (but not fathers) modulate their hours according to family needs and demands (Becker & Moen, 1999). Furthermore, mothers in full-time work tend to be of higher SES status with higher levels of education, higher occupational status, more secure jobs, and better work-family conditions than those with part-time jobs. But mothers may also select into full-time work due to financial necessity, especially if the father is unemployed. Such opposing issues of selectivity introduce heterogeneity into mothers' work-hour categories that may not be fully accounted for by the confounding factors, possibly masking an association between mothers' work hours and child behavior.

Australia has a large gendered dispersion of working hours in contrast to the United States but similar to other OECD countries such as Mexico, the Netherlands, New Zealand, and the United Kingdom, which also have high rates of part-time employment among women and longer working hours (45+ hours per week) among men (Organization for Economic Co-operation and Development, 2009). Repetition of this study in such countries where fathers' work hours are typically long, where working hours are not capped or guided by legislation, and where work-family policies are the least flexible in respect to paternal leave would be valuable.

Study Strengths and Limitations

This study has several strengths. It uses a large prospective cohort and examines both mothers' and fathers' work hours in two-parent families, including nonemployed parents, thereby extending the analysis and generalizability of results beyond the dual-earner family. We used an internationally recognized and widely validated measure of child behavioral problems. Many important potential confounders were adjusted for in the analyses. Using a mixed-effects model, we were able to examine time-varying predictor

and outcome variables and adjust for time-invariant and unobserved individual heterogeneity. This is a significant advantage over simple linear regression. We also tested three mediating factors that were not well studied in research on parental work hours and child outcome.

The study also has several limitations. Causality could not be determined. Behavioral problems among children may result in parents cutting back on work hours to manage difficult behavior or perhaps working longer hours to avoid it (Pleck, 2010, p. 78). Further, there was only information about parenting and time with children at age 10; the quantity and nature of parent-child time from ages 5 to 10 likely differed (Yeung et al., 2001). But longitudinal studies have shown patterns of father involvement to be established early and persist throughout childhood (Gottfried & Gottfried, 2006). It was not possible to determine if fathers compensated for less time during the week by more time on the weekend. Another potential modifying factor is job quality. Long work hours tend to negatively influence worker and family well-being when the job is of poor quality (Barnett, 2006). Parents' poor job quality has been linked with child behavioral problems, especially in low-income families (e.g., Strazdins, Shipley, Clements, O'Brien, & Broom, 2010), whereas fathers' occupational complexity was found to be protective (Parcel & Menaghan, 1994). Other unmeasured factors may have influenced the findings, such as family and work transitions, or growing chaos evident across environmental settings that disrupt daily activities of life and the well-being of family members (Bronfenbrenner, 2005; Weisner, 2010).

Finally, parental reports of child behavioral problems are subject to bias. Mothers are more likely to report behavioral problems in their children if they are emotionally impaired themselves (Sawyer, Streiner, & Baghurst, 1998). More externalizing behaviors among boys associated with parental work hours may also, in part, be due to differential maternal reporting on the CBCL by child gender (Najman et al., 2001). In families where fathers are working long hours it is possible that mothers experience their sons' behavior as more challenging and are therefore more likely to report externalizing problems on the CBCL.

Implications for Policy and Future Research

Policy has traditionally focused on enabling flexibility for mothers in balancing their work and family responsibilities. The results of this study challenge public and policy concern that mothers' absence due to paid work may have a negative impact on children's development. This study provides evidence to support equal opportunities for mothers and fathers to share parenting and work responsibilities. Instead of focusing on negative effects of mothers' work hours, policy attention should be given to negative consequences of fathers' long work hours for children's emotional well-being. Fathers should be given incentives not to work long hours but to have a greater share of parenting responsibilities. The gender polarization of work hours in the one-and-a-half earner families serves to reinforce gender inequality at home and in the labor market (Charlesworth et al., 2011). Future research should aim to replicate these findings in similar and more diverse populations with attention to different family types. Extending data collection to include fathers' work hours from the child's birth will help to determine whether there is a longer cumulative effect or a more potent influence when children are young.

In summary, our study extends previous research by examining the association between the work hours of both parents (including nonemployed parents) and child behavioral problems during middle childhood. Although there was no link between mothers' work hours and child behavior, our study showed higher levels of behavioral problems when fathers worked very long hours. In further examining the role of child gender, our findings suggest that the risk appears to be more relevant for boys, a finding that requires replication. The role of parent and child gender in the relationship between parental work hours and child behavioral outcomes warrants further investigation with an expanded set of mediators such as the quality of parental time with children, parental stress, mothers' and fathers' parenting, and family and marital disruption.

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