



Parents' transitions into and out of work-family conflict and children's mental health: Longitudinal influence via family functioning



Huong Dinh^{a,*}, Amanda R. Cooklin^b, Liana S. Leach^a, Elizabeth M. Westrupp^b, Jan M. Nicholson^b, Lyndall Strazdins^a

^a The National Centre for Epidemiology and Population Health, The Australian National University, Canberra, ACT, Australia

^b Judith Lumley Centre, La Trobe University, VIC, Australia

ARTICLE INFO

Keywords:

Work family conflict
Children's mental health
Family functioning
Parent mental health
Parental relationship
Parent-child relationship
Random effects

ABSTRACT

The demands arising from the combination of work and family roles can generate conflicts (*work-family conflicts*), which have become recognized as major social determinants of mothers' and fathers' mental health. This raises the question of the potential effects on children. The current study of 2496 Australian families (7652 observations from children aged 4–5 up to 12–13 years) asks whether changes in children's mental health corresponds with changes in mothers' and fathers' work-family conflicts. Using longitudinal random-effect structural equation models, adjusting for prior child mental health, changes in work-family conflict were examined across four adjacent pairs of biennial data waves. Children's mental health deteriorated when their mother or father experienced an increase in work-family conflict, but improved when parents' work-family conflict reduced. Results held for mothers, fathers and couples, and the key pathways appear to be changes in children's relational environments. These results contribute new evidence that conflicts between the work-family interface are powerful social determinants of mental health which have an intergenerational reach.

1. Introduction

The intersection between work and family life – the *work-family interface* – represents the interaction between two of the most important social domains in adults' lives. There now exists a large literature detailing the impact on adults when *conflict* (*work-family conflict*, *WFC*) between these two domains occurs, a problem experienced by one third of mothers and fathers (Strazdins et al., 2013). Cross-sectional and emerging longitudinal evidence describes sustained and significant impairments in parents' mental health, with flow-on effects to marital conflict and parent-child interaction (Amstad et al., 2011). What is not known is whether this social determinant of adults' health, WFC, also poses risks for children. Does the 'long arm of the job' (Meissner, 1971) reach across generations to shape children's health and wellbeing? If so, how do these impacts occur? Is it through alterations in parent mental health, or because WFC alters family relationships and environments? Do these pathways depend on parent gender, and is there a dose-response effect, whereby the longer parents experience WFC the greater the impact on children? This study addresses these questions and the evidence gaps they represent, using five waves of longitudinal data collected from Australian parents and children over a total of ten years

(child ages 4–5 to 12–13 years). We conceptualize WFC as a dynamic process that can change or persist. The aim of this study is to investigate what happens to children's mental health when parents move into or out of WFC, and when WFC persists. We then seek to explain the mental health consequences for children via changes to three fundamental characteristics of children's relational environment: parents' mental health; parent-child interactions; and the quality of the couple relationship.

Parents' employment is generally considered to be protective for child development, providing income, access to resources, self-esteem, and social connectedness (Stansfeld and Candy, 2006). However, the dual demands of work and care pose a dilemma for contemporary parents, who combine care of children with income generation and job performance in competitive, often insecure, labor markets. *WFC* refers to the strains that arise for parents when these work and family demands are incompatible (Greenhaus and Beutell, 1985). *WFC* is based on the 'scarcity hypothesis', whereby the limited resources of time and energy become taxed to the point of overload (Goode, 1960). Strains occur from competing demands on parents' time (time-based strains) and/or attention (attention-based strains). These lead to fatigue, distress or emotional withdrawal as parents forgo family events or valued

* Corresponding author. National Centre for Epidemiology and Population Health & Tax and Transfer Policy Institute, The Australian National University, Building 62, M Block, Corner Mills and Eggleston Rds, ACT 0200, Australia.

E-mail address: huong.dinh@anu.edu.au (H. Dinh).

<http://dx.doi.org/10.1016/j.socscimed.2017.10.017>

Received 15 June 2017; Received in revised form 10 October 2017; Accepted 14 October 2017

Available online 16 October 2017

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time with their children for work-related opportunities and expectations (Crouter and Bumpus, 2001). Combined with their physical absence from family routines and activities, these maladaptive responses are likely to be one pathway by which work influences children (Strazdins et al., 2013).

1.1. Parents' WFC and child outcomes

Parenting behaviors and child development are governed by intersecting parent, child, social and environmental determinants. For children, safe physical environments, access to adequate nutrition, and relational environments – whether nurturing or neglectful – are fundamental. Disparities in these factors explain disparities in children's longer-term developmental outcomes (Shonkoff, 2010). We argue that parents' workplace environments are largely unrecognized upstream social determinants of children's outcomes.

Parents' jobs, however enriching, stressful or depleting, are determinants of family resources including parents' time with children and parents' wellbeing (Cooksey et al., 1997; Dinh and Racionero, 2017; Dinh et al., 2017). Poor quality jobs that expose parents to work overload and intensity, low autonomy, long hours and inflexible schedules have been linked to more punitive and harsh parenting behaviors (Crouter and Bumpus, 2001; Perry-Jenkins et al., 2007), reduced emotional availability (Johnson et al., 2013); poorer quality family relationship with children (Cooklin and Westrupp and et al., 2015; Cooksey et al., 1997) and less time together (Cooklin and Westrupp and et al., 2015; Johnson et al., 2013; Repetti, 1994; Strazdins et al., 2006). These associations are evident for both mothers and fathers, challenging the assumption that WFC is only a problem for mothers. Poor quality job conditions are also linked to poorer child and adolescent mental health in cross-sectional studies (Dockery et al., 2016; Johnson et al., 2013), but there is a dearth of longitudinal evidence.

This study conceptualizes the work-family interface as an important point of entry between labor markets, work conditions and the 'transfer of health' to children. Inter-role pressures between work and family may be relatively small, but are daily and cumulative (Demerouti et al., 2004), resulting in psychological, emotional and cognitive impairments (Greenhaus and Beutell, 1985). To date, several cross-sectional studies have linked parents' WFC to children's behavior problems (Strazdins et al., 2013; Vieira et al., 2016).

Few studies have investigated these associations across time. One exception is Chee et al. (2009) study of 340 employed mothers. Work-related adversities (long hours, irregular scheduling) were associated with WFC and poorer maternal mental health at baseline. Unexpectedly, maternal distress was associated with a decrease in adolescent distress and problem behaviors one year later. Further research is warranted to ascertain the effect of parents' WFC on children over time.

1.2. Transitions in WFC as a determinant of child outcomes

WFC is dynamic, yet very few studies model it this way. Employees change jobs and alter workloads or roles within jobs resulting in changes in WFC (Cooklin et al., 2016; Kinnunen et al., 2004). Studying parents' movements into and out of WFC (transitions) and persistence in WFC advances theory and evidence by testing the extent to which child outcomes change in response to both *increases* and *decreases* in WFC.

Strazdins et al. (2006) pose three key pathways via which WFC affects children's relational environments – through parent wellbeing, parent-child interactions, and inter-parental relationships. Parents with optimal mental health have capacity to provide warm, nurturing and stimulating environments for their children, while parental stress and mental health difficulties are associated with poorer quality parent-child interactions, less warmth, more irritability and less consistency (Conger et al., 2002). Children who experience parental anger or

hostility, frequent rejection or low warmth are less able to self-regulate, and are more likely to have conduct and aggression problems and emotional symptoms such as withdrawal and anxiety (Giallo et al., 2014). Similarly, children raised in environments with high marital conflict show more fearfulness, withdrawal and emotional insecurity into adolescence (Brock and Kochanska, 2016).

What evidence is there that WFC acts as an upstream 'stressor' on children's relational environments? Entry into, or persistence in WFC is associated with poorer parent mental health for both mothers and fathers (Cooklin et al., 2016). Cross-sectional research has linked WFC with parenting stress (W. Goodman et al., 2011). The few studies that have looked specifically at parent-child interactions report an association between WFC and increased irritability and less emotional stability, for mothers and fathers (Baxter and Smart, 2011; Kinnunen and Mauno, 1998; Lau, 2010), which in turn have been cross-sectionally linked to variations in children's internalizing and externalizing behaviors (Vieira et al., 2016). WFC also appears to erode the couple relationship, marital satisfaction, and the quality of emotional exchanges between parents in both cross-sectional and longitudinal research (Fellows et al., 2016).

In summary, there is theoretical and empirical support for the hypothesis that WFC can erode the family relational resources important to children's mental health. Few studies test this connection directly, robustly or dynamically. Does moving into WFC have immediate consequences to parents' relationship, parenting and mental health? What happens when WFC is relieved, for example? While it is assumed that mothers' WFC may be the most important, comparisons with fathers' WFC have yet to be undertaken. In Australia, the predominant pattern is for mothers to work part-time, fitting their work around family responsibilities (Charlesworth et al., 2011). Conversely, Australian fathers face more frequent exposure to WFC because of long work hours (e.g. over 45 h/week), and a reluctance to access some of the job conditions that would ameliorate WFC (e.g. flexible scheduling, paid family-related leave). Thus paternal WFC may be widespread and its impact long-lasting (Cooklin and Giallo and et al., 2015). Analyses are therefore stratified by gender to ascertain differences or similarities in influences. Finally, there may be a compounding effect on children if both parents experience WFC simultaneously. Research indicates that fathers' and mothers' WFC 'crosses over' to affect each other's wellbeing, compounding strains, poor mental health and conflict in the couple relationship (Demerouti et al., 2005; Fellows et al., 2016). If both parents 'enter' into WFC and if these conflicts persist, it is plausible that the risks to children's mental health are amplified.

1.3. The current study

We investigate the importance of mothers' and fathers' WFC transitions for their children's mental health, focusing on children in dual-earner families – the most prevalent family form in Australia. We ask if there are differences in the pathway and effect size for mothers relative to fathers, if any effects are amplified when they combine in couples, and how such influences on children occur. Specific hypotheses and analyses are:

H1). Children whose mothers *or* fathers move into WFC (conscript), or experience persistent WFC will show worse mental health compared with children whose parents do not. Children whose mothers or fathers move out of (escape) WFC will show a corresponding improvement in mental health, although their mental health may be poorer relative to children whose parents do not ever report WFC.

H2). Children whose mothers *and* fathers move into, or experience persistent WFC will show worse mental health compared with children whose parents have different WFC, have escaped from WFC, or do not ever report WFC.

H3). The relationship between parents' WFC transitions and child

mental health will be mediated by corresponding changes (deficits or improvements) to parent mental health, couple relationship quality and parent-child interactions.

2. Method

2.1. Design

The current study used five waves of data from the Kindergarten cohort of *Growing up in Australia*, the Longitudinal Study of Australian Children (LSAC). LSAC is an omnibus study of children's health and development, assessing a wide range of child, parent and environmental variables using validated, brief measures. Data were collected biennially from a nationally representative sample via parent face-to-face interviews and questionnaires. The Kindergarten cohort data collection commenced in 2004 (Gray and Sanson, 2005; Zubrick et al., 2014) when children were aged 4–5 years (Wave 1), and has continued to age 12–13 years (Wave 5). Of the contactable children selected and residing in the sampled postcodes, 4983 took part in LSAC (59% response rate) (Soloff et al., 2005), with a high retention rate of 74% of the original sample ($n = 3682$) participating in all five waves (Norton and Monahan, 2015).

2.2. Participants

We limited the sample to dual-earner couples (i.e., parents in a couple relationship, both employed) aged 24–65 years where both parents were employed in ≥ 2 consecutive waves. The total sample included data on 2496 couples and their children.

2.3. Measures

2.3.1. Children's mental health problems

Children's mental health was measured at each wave via Parent 1 (described as 'the parent who knows the child best', mostly mothers) report on the Strengths and Difficulties Questionnaire (SDQ). The SDQ is suitable for children aged 4–17 years. It contains four problem subscales with five items each assessing emotional symptoms, conduct problems, hyperactivity/inattention, and peer relationship problems (5 items each; R. Goodman, 1997). Items are rated on a 3-point scale (not true; somewhat true; certainly true) and summed across the subscales to give a total problems score, with higher scores indicating more problem behaviors. The SDQ has high internal reliability ($\alpha = 0.81$) (R. Goodman, 1997), adequate test-retest reliability (range from 0.61 to 0.77), and comparable psychometric properties to the Rutter questionnaires and Child Behavior Checklist (R. Goodman, 1997). SDQ scores were standardized at each wave to represent relative ranking within age cohort to control for age variations.

2.3.2. Work-family conflict transitions

Work and family conflict (WFC) was assessed using four items adapted from Marshall and Barnett's (1993) measure of strains between work and family. Two items assessed employment-related strains on family life and parenting (e.g., 'Because of my work responsibilities, my family time is less enjoyable and more pressured') and two assessed strains from family responsibilities that affect work (e.g., 'Because of my family responsibilities, the time I spend working is less enjoyable and more pressured'). Responses ranged from 1 (strongly disagree) to 5 (strongly agree) and were averaged to obtain a total score of WFC as the four items load reliably onto a single construct (Westrupp et al., 2015). A cut-off of > 3 (representing parents who agreed on some or most items) was applied to classify 'high' WFC (versus 'low/no' WFC) scores to construct the transition variables outlined below.

A transition in WFC (i.e., 'TWFC') was defined based on a parent's WFC categorization at the follow-up wave compared to the index wave

(i.e. from one wave to the adjacent next wave). For mothers and fathers separately, TWFC was coded as *never*, *conscripted*, *escape* or *persisting*. Parents who had low WFC in the initial wave were classified as (i) *never* if parent WFC remained low at the subsequent wave; or (ii) *conscripted* if the parent moved from low to high WFC in the subsequent wave. Similarly, if parent WFC was high in the initial index wave, TWFC was classified as (iii) *persisting* if it remained high in the subsequent wave; or (iv) *escape* if reported as low in the subsequent wave. The reference category in all analyses was *never*.

Couple transitions in WFC were derived by combining mothers' and fathers' measures. Families where both parents reported they had never experienced WFC ('both never') were the reference category against which families were compared where: (i) mothers and fathers were *both conscripted* into high WFC; (ii) mothers and fathers had *different* categories for WFC transitions (e.g., one was conscripted while the other escaped); (iii) mothers and fathers *both escaped* from high WFC; and (iv) mothers and fathers both had *persisting* WFC.

2.3.3. Family environment

Mothers' and fathers' self-reported *mental health* was assessed using the Kessler 6-item (K6) measure of psychological distress (six non-specific symptoms of distress and anxiety) (Kessler et al., 2002). Parents reported how often they felt each symptom (e.g., sad, nervous, worthless) from none (0) to all of the time (4). Responses were summed to give a continuous measure of distress (range 0–24) for each wave.

Marital dissatisfaction was assessed using mothers' and fathers' response to the item: "Which best describes the degree of happiness, all things considered, in your relationship?" Responses were on a 7-point scale from 1 (extremely unhappy) to 7 (perfectly happy) and dichotomized (< 5) to reflect overall marital dissatisfaction (yes/no). Parent-to-child interaction was assessed by mothers' and fathers' self-report of *parenting irritability* using 5 items (10-point scale), assessing frequency of hostile, harsh or rejecting behaviors toward the child (Zubrick et al., 2014). Items were averaged with higher scores indicating more frequent irritable interactions.

2.3.4. Covariates

Analyses accounted for *parents' characteristics* including age (24–34; 35–44; 45–65 years), education (university versus no university qualification), health problems (5-item checklist, e.g., chronic pain, difficulty breathing; recoded to above or below the mean number of health problems), number of weekly work hours categorized for mothers (< 20 h; 20–40 h; > 40 h) and fathers (< 20 h; 20–40 h; > 40 –50 h; > 50 h), and prior parent mental health (the K6 score from the index wave). Analyses also accounted for: *child characteristics* including child gender, child age, child health status (excellent/very good), child special health needs and prior child mental health (the SDQ total score from the index wave); *family characteristics* including quintiles of equalized household income (total household income from all sources), calculated by applying the OCED-modified equivalent scale (1 to the household head, 0.5 to each additional adult and 0.3 to each child), the number of children in the household, having an infant in family (0 = no infant, 1 = an infant), and; *neighborhood socioeconomic disadvantage* (mean = 1000; the higher the index, the less disadvantaged the location).

2.4. Data preparation

In every wave, approximately 10% of respondents did not provide answers for 5% or more of selected variables. Compared to those with complete data, those with missing data were more likely to report WFC, more distressed, more likely to be socioeconomically disadvantaged (lower education, fewer work hours, lower occupational status, poorer job quality) and to have a higher care burden (infant, more children, child with special health care needs). Missing data were imputed using a chained regression procedure, a suitable approach for imputing

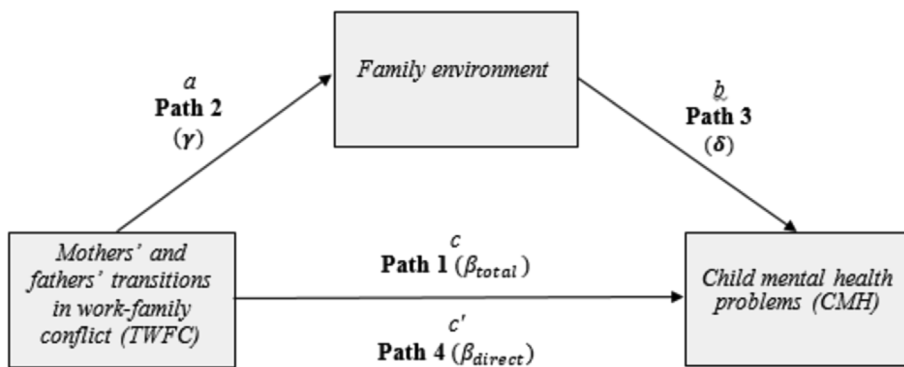


Fig. 1. Conceptual model linking parent transitions in work-family conflict to child mental health problems. Note: a (indirect effect), b (indirect effect), c (total effect) and c' (direct effect) represent hypothesized pathways.

incomplete large, national datasets (Royston and White, 2011). All model variables were included in the imputation analyses using one imputed dataset.

2.5. Statistical methods

A structural equation model with random-effect treatment (Skrondal and Rabe-Hesketh, 2004) was used to investigate the research hypotheses. Two-level maximum likelihood regressions were used: the first level assumed fixed effects for covariates (e.g., demographics) while the second assumed random effects within individuals in the same household. This approach allows inclusion of both within- and between-individual effects and addresses limitations present in fixed-effect models, which only examine within-individual effects (Wooldridge, 2003, 2005). It also overcomes problems of imprecise estimates with large standard errors if predictors (e.g., parent education) vary between individuals but not over time (Plümper and Troeger, 2007). Our structural equation modeling simultaneously tested all paths of the hypothesized model (Fig. 1).

Path 1. The first step tested the total effects of parent TWFC (β'_{total}) on child mental health at the follow-up wave ($CMH_{i,t}$) using linear regression, as described below in the equation for Path 1 (H1) (note analyses were stratified by mothers' and fathers' TWFC status; reference never vs. *conscript*, *escape* and *persistent*). Next, transitions for mothers and fathers were combined to test if children's mental health at follow-up varied by combined couple TWFC (*never* reference vs. *conscript* for both, *different TWFC* for each parent, *escape* for both, and *persistent* for both) (H2).

$$CMH_{i,t} = \alpha_0 + \alpha_{1,i} + \alpha_{2,t}t + \alpha_3 CMH_{i,t-1} + \beta'_{total} TWFC_{i,t} + \theta' X_{i,t} + u_{i,t} \tag{Path 1}$$

Path 2. The second step tested the effect of mothers' and fathers' TWFC and couple TWFC on three aspects of the family environment reported by mothers and fathers. Models were tested using linear regression for parents' mental health ($PMH_{i,t}$) and irritable parenting ($Parenting_{i,t}$) and logit regressions for marital dissatisfaction ($Rela_{i,t}$).

$$PMH_{i,t} = \gamma_0 + \gamma_{1,i} + \gamma_{2,t}t + \gamma_3 PMH_{i,t-1} + \gamma'_4 TWFC_{i,t} + \gamma'_5 X_{i,t} + u_{i,t,1} \tag{Path 2a}$$

$$\begin{aligned} &Pr(Rela_{i,t} = 1 | t, Z_{i,t}) \\ &= \frac{\exp(\delta_0 + \delta_{1,i} + \delta_{2,t}t + \delta_3 PMH_{i,t-1} + \delta'_4 TWFC_{i,t} + \delta'_5 X_{i,t} + u_{i,t,2})}{1 + \exp(\delta_0 + \delta_{1,i} + \delta_{2,t}t + \delta_3 PMH_{i,t-1} + \delta'_4 TWFC_{i,t} + \delta'_5 X_{i,t} + u_{i,t,2})} \end{aligned} \tag{Path 2b}$$

$$Parenting_{i,t} = \varphi_0 + \varphi_{1,i} + \varphi_{2,t}t + \varphi_3 PMH_{i,t-1} + \varphi'_4 TWFC_{i,t} + \varphi'_5 X_{i,t} + u_{i,t,3} \tag{Path 2c}$$

Path 3. The third step tested the effect of the three family environment variables measured at the follow-up wave, i.e., parent mental health ($PMH_{i,t}$), marital dissatisfaction ($Rela_{i,t}$) and irritable parenting

($Parenting_{i,t}$), on child mental health ($CMH_{i,t}$) (H3) using linear regression as described in the equation for Path 3.

$$CMH_{i,t} = \alpha_0 + \alpha_{1,i} + \alpha_{2,t}t + \alpha_3 CMH_{i,t-1} + \theta_1 PMH_{i,t} + \theta_2 Rela_{i,t} + \theta_3 Parenting_{i,t} + \theta' X_{i,t} + u_{i,t} \tag{Path 3}$$

Path 4. The fourth step tested the total effects of parent TWFC (β'_{total}) and the family environment (i.e., parent mental health ($PMH_{i,t}$), marital dissatisfaction ($Rela_{i,t}$) and irritable parenting ($Parenting_{i,t}$), on child mental health ($CMH_{i,t}$) using linear regression. Both the direct effects of TWFC (β'_{direct}) on child's mental health and the mediation (indirect) effects of TWFC via the family environment ($1 - \frac{\beta'_{direct}}{\beta'_{total}}$) were estimated. Following Bauer et al. (2006) and L. A. Goodman (1960), the indirect effects of TWFC on child mental health were calculated as the products of the effects of TWFC on each aspect of family environment estimated in Path 2 and the effect of each aspect family environment on child mental health estimated in Path 3, taking into account correlation between them. The total effect is the sum of the indirect effects and the direct effects. Following Hayes (2009), bootstrapping with 500 replications was conducted to derive the standard errors.

$$CMH_{i,t} = \alpha_0 + \alpha_{1,i} + \alpha_{2,t}t + \alpha_3 CMH_{i,t-1} + \beta'_{direct} TWFC_{i,t} + \theta_1 PMH_{i,t} + \theta_2 Rela_{i,t} + \theta_3 Parenting_{i,t} + \theta' X_{i,t} + u_{i,t} \tag{Path 4}$$

Prior child mental health ($CMH_{i,t-1}$) was controlled to account for reciprocal effects between child's mental health and parents' WFC (Paths 1, 3 and 4). Prior parent's mental health ($PMH_{i,t-1}$) was adjusted as per equations for Paths 2a-2c. Analyses controlled for relevant parent, child, family and neighborhood covariates ($X_{i,t}$). Note that in all models, random-effects regression allowed us to adjust for relevant time-specific effects (t) as proxies for child age effects, and for individual child time-invariant effects ($\alpha_{1,i}$).

3. Results

Sample characteristics are described in Table 1 (N = 7652 observations; 2496 parent couples). There were 6080 transitions in WFC (TWFC) reported by mothers and fathers. Rates of transition were similar for mothers and fathers: 57–59% never experienced WFC; while between 12 and 15% were conscripted into conflict, escaped from conflict or experienced persistent conflict across two years. Mothers were more likely to be younger; and employed part-time; and less likely to report marital satisfaction compared to fathers. There were no gender differences in parent mental health or irritable parenting. For children, the majority were in good health, with lower rates of mental health problems compared to the population (negative z-score).

In 55% of couple transitions mothers and fathers experienced different TWFC; in 37% neither reported TWFC; in 2% both were conscripted into WFC; in 3% both escaped from WFC; and in 3.5% of transitions both parents experienced persistent WFC. More than half of the families were in the highest or second highest quintile of

Table 1
Sample characteristics for mothers and fathers (N = 2496 families).

	Mother	Father	Difference	p
Parent characteristics				
TWFC: Number of observations	6080	6080		
TWFC categories (%)				
Never	59.3	57.3	0.021	0.024
Conscript	12.4	13.4	−0.009	
Escape	13.8	15.3	−0.015	
Persistent	14.5	14.1	0.004	
Age group (%)				
24–34 years	6.8	3.7	0.031	0.000
35–44 years	65.2	53.7	0.114	
45–54 years	27.5	38.6	−0.110	
55 years or above	0.5	4.0	−0.035	
University qualification (%)	90.6	90.2	0.003	0.518
Health problem (%)	5.2	5.5	−0.003	0.396
Number of weekly work hours (%)				
< 20	30.6	1.5	0.291	0.000
20–40	57.6	43.8	0.138	
40–50	8.3	31.1	−0.228	
> 50	3.6	23.7	−0.201	
Parent mental health (m, SD)	2.62 (2.9)	2.60 (2.9)	0.020	0.702
Marital satisfaction (%)	46	53	−0.064	0.000
Irritable parenting score (m, SD)	2.11 (0.6)	2.12 (0.6)	−0.009	0.409
Family-level characteristics				
Combined parents' TWFC (%)				
Both never	37.1			
Both conscript	2.1			
Both escape	2.3			
Both persistent	3.5			
Different TWFC	55.1			
Child male (%)	50			
Child global health excellent/very good (%)	91			
Child with special health care needs	13			
Child mental health problems (mean z scores)	−0.11			
Equivalentized household income (%)				
1st quintile (Lowest)	7.1			
2nd quintile	16.1			
3rd quintile	22.7			
4th quintile	26.2			
5th quintile (Highest)	28.0			
No. of children in household, m (SD)	2.5 (0.8)			
Neighborhood disadvantage, m (SD)	1009 (78)			

Notes: Data summarizes sample characteristics over five waves (N = 7652 observations). TWFC = parent transitions in work-family conflict.

equivalized household income; and were slightly above the Australian population mean (range 200–1200) on neighborhood socioeconomic advantage (Pink, 2006).

3.1. Work-family conflict transitions and child mental health problems (Path 1)

Table 2 presents the stratified models of parent WFC transitions on child mental health (adjusted for prior child mental health) (H1). For mothers, any transitions involving high WFC were associated with higher rates of child mental health problems compared to children whose mothers never experienced WFC. The strongest effect was for *persistent* WFC (i.e., associated with one tenth of a standard deviation higher child mental health problems), followed by mothers being *conscripted* into WFC, then mothers *escaping* from WFC. For fathers, the strongest effect on child mental health was when fathers were *conscripted* into WFC, followed by *persistent* WFC. There were no detectable differences in child mental health comparing fathers who had *escaped* from WFC to those who had never experienced WFC.

For couples, there was no difference in child mental health outcomes between both parents reporting having *never* experienced WFC

Table 2
Mother and father transitions in work-family conflict (TWFC) predicting child mental health problems (Path 1).

	Coef.	Bootstrap SE
Mothers' TWFC (reference 'Never')		
Conscript	0.09***	(0.029)
Escape	0.04**	(0.025)
Persistent	0.10***	(0.030)
Fathers' TWFC (reference 'Never')		
Conscript	0.10***	(0.031)
Escape	0.03	(0.024)
Persistent	0.07**	(0.030)
Combined couple TWFC (reference 'Both never')		
Both with escape WFC	0.03	(0.072)
Different TWFC	0.05***	(0.019)
Both with conscript WFC	0.15**	(0.079)
Both persistent WFC	0.13**	(0.061)

Notes: Tables show coefficients (Coef.) and bootstrap standard errors (SE) with 500 replications from structural equation models. Models adjusted for child (prior mental health, gender, health, special health care needs), parent (age group; university education, health problems, work hours) and household characteristics (equivalized household income, number of children, neighborhood disadvantage). In the pooled sample, characteristics of both parents' were controlled for.

compared to both parents reporting *escape* from WFC. However, all other couple TWFC combinations were associated with higher rates of child mental health problems. The strongest effects were observed when both parents were *conscripted* into WFC or when both reported *persistent* WFC. Smaller effects were evident when parents reported *different* WFC transitions.

3.2. Work-family conflict transitions and family environment (Path 2)

Table 3 presents adjusted effects of parents' TWFC status on the three measures of the family environment. Mothers being *conscripted* into or experiencing *persistent* WFC reported higher levels of mental health problems and irritable parenting, and poorer marital satisfaction, compared to mothers who reported *never* having experienced high WFC. The effect of *escaping* from WFC on mothers' mental health and marital satisfaction was considerably smaller compared to the other types of WFC transitions, and there was no evidence of a difference between *escaping* and *never* having experienced WFC in terms of mothers' report of irritable parenting. For fathers, similar patterns and effect sizes were found. Compared to fathers who reported *never* having experienced high WFC, the strongest effects were evident on all relational outcomes for fathers *conscripted* into or experiencing *persistent* WFC, while any impact for fathers *escaping* were only evident on report of marital dissatisfaction, not for mental health or irritable parenting.

For couple analyses (Table 3), neither mothers nor fathers reported a higher risk to the family environment when both had *escaped* from WFC. However, where couples had *different* TWFC, or where both were *conscripted* into or experienced *persistent* WFC, both mothers and fathers consistently reported poorer relational environments on all indicators. The strength of effects of couple TWFC status on the three family environment measures differed slightly depending on whether outcomes were reported by mothers or fathers.

3.3. Family relational environment and child mental health problems (Path 3)

Table 4 presents results from three models testing the adjusted effects of the three family environment measures as reported by mothers (Model 1), fathers (Model 2), and both parents (Model 3), predicting child mental health problems. From Models 1 and 2, the strongest predictor of child mental health problems was mothers' and fathers' irritable parenting, followed by poorer mental health (reported by mothers), but not parent's marital dissatisfaction. When predictors were

Table 3
Mother and father transitions in work-family conflict (TWFC) predicting family relational environment (Path 2).

	Family environment					
	Parent mental health		Irritable parenting		Marital dissatisfaction	
	Coef.	Bootstrap SE	Coef.	Bootstrap SE	Coef.	Bootstrap SE
Mothers' TWFC (reference 'Never') ^a						
Conscript	0.90***	(0.106)	0.10***	(0.022)	0.28***	(0.090)
Escape	0.25**	(0.098)	0.02	(0.020)	0.22***	(0.083)
Persistent	0.79***	(0.107)	0.11***	(0.027)	0.65***	(0.094)
Fathers' TWFC (reference 'Never') ^b						
Conscript	0.99***	(0.114)	0.08***	(0.022)	0.66***	(0.084)
Escape	0.00	(0.097)	0.03	(0.019)	0.30***	(0.080)
Persistent	0.94***	(0.108)	0.14***	(0.025)	0.81***	(0.086)
Combined couple TWFC (reference 'Both never')						
<i>Family environment reported by mother</i>						
Both with escape WFC	0.13	(0.212)	−0.03	(0.044)	0.33*	(0.193)
Different TWFC	0.41***	(0.064)	0.02**	(0.007)	0.32***	(0.058)
Both with conscript WFC	1.25***	(0.242)	0.06*	(0.033)	0.83***	(0.197)
Both persistent WFC	0.88***	(0.183)	0.09*	(0.045)	0.95***	(0.182)
<i>Family environment reported by father</i>						
Both with escape WFC	0.00	(0.201)	−0.01	(0.042)	0.36*	(0.191)
Different TWFC	0.41***	(0.065)	0.04**	(0.016)	0.44***	(0.061)
Both with conscript WFC	0.97***	(0.252)	0.10*	(0.056)	0.68***	(0.198)
Both persistent WFC	1.15***	(0.212)	0.12***	(0.042)	0.93***	(0.166)

Notes: Tables show coefficients (Coef.) and bootstrap standard errors (SE) with 500 replications from structural equation models. Models adjusted for child (prior mental health, gender, health, special health care needs), parent (age group; university education, health problems, work hours) and household characteristics (equivalized household income, number of children, neighborhood disadvantage). In the pooled sample, characteristics of both parents' were controlled for.

*p < 0.1; **p < 0.05; ***p < 0.01.

^a Family environment outcomes reported by mother.

^b Family environment outcomes reported by father.

combined in Model 3, the effect size of mothers' irritable parenting was twice as strong as the effect size of fathers' irritable parenting. In the combined model, marital dissatisfaction did not predict child outcomes, although maternal mental health problems were associated with higher child mental health problem scores.

3.4. Work-family conflict transitions, family environment and child mental health problems (Path 4)

Table 5 presents the adjusted direct and indirect effects of mother and father TWFC on child mental health problems. There was support for mediation in mothers' TWFC model. The total effects associated with mothers being *conscripted* into or experiencing *persistent* TWFC were largely indirect (55–58%), via mothers' mental health, parenting irritability and lack of marital satisfaction. Mediation was also evident for mothers reporting *escape* from WFC, where 32% of the total effects were indirect. Findings were similar for fathers. For fathers reporting

persistent WFC, 57% of the total effect of TWFC on child mental health problems were indirect. For fathers *conscripted* into or *escaping* from WFC, 27–37% of the total effects were explained by the family environment differences.

For couple TWFC, 57% of the total effect of both parents experiencing *persistent* WFC on child mental health problems was explained by differences in the family environment. Similarly, when both parents were *conscripted* into WFC or reported *different* transitions in WFC, 43–47% of the total effects were explained by the family environment. There was also evidence for mediation with the weakest WFC predictor where both parents reported *escaping* WFC, 28% of the variance in child mental health was accounted for by indirect effects.

4. Discussion

Workplaces are one of the most important social institutions families engage with, supplying critical resources to families. For many

Table 4
Three aspects of the family environment reported by mothers, fathers, or both parents predicting child mental health problems (Path 3).

	Model 1: Mother-report of family environment		Model 2: Father-report of family environment		Model 3: Mother and father-report of family environment	
	Coef.	Bootstrap SE	Coef.	Bootstrap SE	Coef.	Bootstrap SE
<i>Family environment reported by mother</i>						
Parent mental health	0.02***	(0.004)			0.02***	(0.004)
Irritable parenting	0.25***	(0.079)			0.26**	(0.101)
Marital dis-satisfaction	0.02	(0.018)			0.01	(0.020)
<i>Family environment reported by father</i>						
Parent mental health			0.00	(0.004)	0.00	(0.003)
Irritable parenting			0.17**	(0.078)	0.11*	(0.062)
Marital dis-satisfaction			0.02	(0.019)	0.01	(0.022)

Notes: Tables show coefficients (Coef.) and bootstrap standard errors (SE) with 500 replications from structural equation models. Models adjusted for child (prior mental health, gender, health, special health care needs), parent (age group; university education, health problems, work hours) and household characteristics (equivalized household income, number of children, neighborhood disadvantage). In the pooled sample, characteristics of both parents' were controlled for.

*p < 0.1; **p < 0.05; ***p < 0.01.

Table 5
 Mother and father transitions in work-family conflict (TWFC) predicting child mental health problems directly and indirectly via the family environment (Path 4).

	Total Effects			Direct Effects			Indirect effects		
	Coef.	Bootstrap SE	%	Coef.	Bootstrap SE	%	Coef.	Bootstrap SE	%
Mothers' TWFC (never WFC' as the reference)									
Conscript	0.09***	(0.029)	100	0.04	(0.030)	42	0.05**	(0.011)	58
Escape	0.04*	(0.025)	100	0.03	(0.024)	68	0.01***	(0.006)	32
Persistent	0.10***	(0.030)	100	0.05*	(0.028)	45	0.06**	(0.017)	55
Intercept variance	0.12***	(0.029)							
Intra coefficient of correlation	0.24***	(0.047)							
Fathers' TWFC (never WFC' as the reference)									
Conscript	0.10***	(0.031)	100	0.07**	(0.029)	73	0.03*	(0.016)	27
Escape	0.03	(0.024)	100	0.02	(0.023)	63	0.01*	(0.005)	37
Persistent	0.07**	(0.030)	100	0.03	(0.030)	53	0.04*	(0.022)	57
Intercept variance	0.29***	(0.039)							
Intra coefficient of correlation	0.41***	(0.042)							
Combined couple TWFC (reference 'Both never')									
Both with escape WFC	0.03	(0.072)	100	0.02	(0.067)	72	0.01	(0.017)	28
Different TWFC	0.05***	(0.019)	100	0.03*	(0.019)	57	0.02*	(0.010)	43
Both with conscript WFC	0.15*	(0.079)	100	0.08	(0.072)	53	0.07**	(0.035)	47
Both persistent WFC	0.13**	(0.061)	100	0.05	(0.058)	43	0.07*	(0.041)	57
Intercept variance	0.27***	(0.043)							
Intra coefficient of correlation	0.41***	(0.055)							

Notes: Tables show coefficients (Coef.) and bootstrap standard errors (SE) with 500 replications from structural equation models. Models adjusted for child (prior mental health, gender, health, special health care needs), parent (age group; university education, health problems, work hours) and household characteristics (equivalized household income, number of children, neighborhood disadvantage). In the pooled sample, characteristics of both parents' were controlled for.
 *p < 0.1; **p < 0.05; ***p < 0.01.

families, however, they also generate WFC. This research is one of the first to document *if* and *how* the work-family interface poses a risk to children. We show that when employment and family are in conflict with each other, this undermines both parents' and children's health. Using a novel longitudinal approach, we trace the pathways of influence on children as a consequence of transitions in parents' experiences of WFC. Our analyses showed that when parents move into WFC and when it becomes chronic, children's wellbeing is adversely affected both directly and indirectly via increases in poor parent mental health, parenting irritability and marital dissatisfaction. Using a representative sample of Australian parents, we found there were linkages between both mothers' and fathers' WFC and child wellbeing.

In our adjusted analyses, the onset and persistence of WFC pre-empted greater mental health problems in children, compared to children of parents with little or no WFC. For mothers, *persistent WFC* was associated with the poorest child mental health, followed by *conscript* into WFC. For fathers, this pattern was reversed; *conscript* into WFC was associated with the poorest child mental health, followed by *persistent WFC*. Notably, when fathers' escaped from WFC, their child's mental health was similar to children whose fathers had never experienced WFC. For mothers, any experience of WFC had a detrimental effect on child mental health that was detectable over a two-year period, even when mothers' WFC was relieved.

These results indicate that both fathers' and mothers' WFC has implications for children's mental health, however mothers' WFC delivers the more sustained adverse effects. Persistent gender norms around work and care and how these shape parents' capacity to navigate the work-family predicament may explain this. Mothers are more likely to tailor their work around children's needs, utilize flexible or part-time work options, respond to 'critical incidents' of conflict (e.g. a sick child), and spend more time in routine and daily care of their children (Maume, 2006; Radcliffe and Cassell, 2015). Fathers are more tied to a 'breadwinner' model and less able to adjust their working hours (Burnett et al., 2010). Qualitative evidence suggests that mothers' unpaid work and care has a buffering effect on fathers' WFC, but amplifies mothers' own conflicts (Radcliffe and Cassell, 2015). These differences likely intensify the adverse effects of mothers' WFC on children's mental health.

Our second hypothesis was supported. Children were at

substantially higher risk of poorer mental health when couples reported some combination that involved at least one parent experiencing WFC at one or more waves (i.e. the *different WFC* combination category compared to none), and at even higher risk again if both parents' reported *conscript* or *persistent WFC*. This suggests a dose-response effect, whereby children are at greater risk when their exposure to WFC increases and is sustained. This is a novel contribution, building on the recent research that has shown this pattern at a single point in time, for parents of 4–5 year old children (Strazdins et al., 2013). Our findings show that couples' WFC is independently and substantively detrimental to children's mental health beyond the early years of age.

Overall, the hypothesized mediation pathways that WFC influences children's mental health via the family environment were supported. WFC conferred measurable adverse effects on parents' own functioning and relationships. Compared to parents who reported little or no WFC, mothers and fathers who entered into, or reported persistent WFC, were more likely to report more mental health problems, poorer marital satisfaction, and more irritable parenting.

Conflicts at the work-family interface can undermine parents' capacity to effectively manage multiple and competing demands, eroding their well-being. Prior longitudinal research has supported a 'loss-spiral' effect whereby this negative relationship between strain and mental health is compounded over time (Demerouti et al., 2004; Westrupp et al., 2015). Closely related to this are the adverse effects on quality of the couple relationship and on the nature and tone of parent-child interactions. WFC encompasses behavioral, attention and time-based strains (Greenhaus and Beutell, 1985), and has been associated with emotional withdrawal, conflict or inequitable sharing of domestic work and childcare (Allen et al., 2000). Plausibly, WFC strains parents' tolerance and interpersonal skills, heightening irritability, tension, and fatigue or prompting withdrawal, such that both partner-to-partner and parenting interactions are affected. Consistent with this, we report a positive relation between higher WFC and more frustrated, impatient, irritable parenting interactions.

Through these three critical indicators of children's relational environments our findings show *how* the work-family interface can influence children's socio-emotional wellbeing. The 'worst' scenario for children was when both parents were either *conscripted* into WFC or experienced *persistent WFC*, adversely affecting parent mental health,

parent-to-parent and parent-child interactions.

4.1. Strengths and limitations

Notable strengths of this study included the use of five waves of data which enabled us to study change in WFC as opposed to the most common past approaches which have treated WFC as a largely static condition. Unique to this field of inquiry, couple-level effects were investigated. Data were from employed couples participating in a national cohort study broadly representative of Australian parents and children. Our structural equation modeling enabled precise specification of direct and indirect effects of WFC transitions to child mental health, revealing how these were mediated through family environments. This approach also allowed us to account for correlations between mediators and random effects by individuals within households, and the analyses were adjusted for children's pre-existing mental health, to ensure that any effects reported between WFC transitions and child mental health were *de novo*. Parents' prior mental health was similarly accounted for in all models. Key factors known to influence children's outcomes (e.g., parent health, family socioeconomic status, parent education) were also adjusted for to minimize the risk of confounding. Together, these features strengthen the likelihood of a causal interpretation. Multiple imputation was used to overcome some of the biases introduced by selective attrition in the longitudinal sample. Bootstrapping was conducted to produce more robust standard errors of estimates. The sample was sufficiently powered to examine multiple potential mediating mechanisms.

There are however, several limitations. While LSAC is broadly representative, socioeconomically disadvantaged families are under-represented and our focus on couples resulted in single parents being excluded. The associations between WFC and relational environments needs to be explored in these and other families where children have elevated risks for mental health problems. We use all parent-report measures including for the main child mental health outcome, likely incurring reporting bias. For example, mothers experiencing persistent work-family conflict may have fewer emotional resources (e.g. patience, consistency) to manage challenging child behaviors and therefore perceive and report their child as more 'difficult'. We note, however, that the linkages between *fathers'* WFC transitions and children's mental health (mother-report) were similar to the effect for mothers. This provides some reassurance that our main effects are not due to reporting bias. WFC transitions were measured as change across two time points, two years apart. Smaller, more episodic, or more sustained WFC were not captured, but may be equally important.

5. Conclusions

The intersection between work and family life – the work-family interface – describes how two of the most important domains in adults' lives interact with each other. This study is one of the first to investigate whether conflict at this interface is a core process via which the 'long arm of the job' (Meissner, 1971) influences children's development. The modeling of fathers', mothers' and couples' experiences of conflict between work and family demands shows a clear, and consistent relationship with children's wellbeing. Furthermore, the modeling reveals how such change may be happening. Movement into WFC and sustained WFC are linked to poorer mental health for children. We find this is due to the erosion of parents' mental health, parent-to-parent and parent-child interactions. This effect is compounded when *both* parents' experience new or sustained WFC.

Parents' work-family conflict has been neglected as a potential determinant of children's health and subsequently as a target for prevention and health promotion. In developed countries where dual-earner families are the norm and one in three mothers and fathers report WFC (Strazdins et al., 2013), a large number of children are vulnerable to the adverse health effects of this contemporary social

dilemma. Earlier research has identified the characteristics of jobs that are broadly supportive of optimal work-family balance, and reduced WFC for parents of young children. These include jobs that have manageable hours, autonomy and control over workloads, flexibility and control over scheduling, along with job security and family specific support from immediate supervisors (Michel et al., 2011). Ensuring jobs are really family-friendly, for fathers as well as mothers, will not only be an intervention that supports the health of any parents who combine employment with raising children, it will be a public health intervention that could protect and promote the mental health and wellbeing of children.

Acknowledgements

This article uses unit record data from Growing Up in Australia, the Longitudinal Study of Australian Children. The study is conducted in partnership between the Australian Government Department of Social Services (DSS); the Australian Institute of Family Studies (AIFS); and the Australian Bureau of Statistics (ABS). The findings and views reported are those of the authors and should not be attributed to DSS, AIFS or the ABS. AC, EW and JN were supported through the Roberta Holmes Transition to Contemporary Parenthood Program, Judith Lumley Centre, La Trobe University. LL is supported by an Australian National Health and Medical Research Council Early Career Fellowship (#1035803).

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