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Abstract

The relationships between employed mothers' work-family conflict and psychological distress are unlikely to be static or one-way. Using longitudinal data, this study investigated reciprocal effects between work-family conflict and psychological distress across eight years of the family lifecycle. We modeled cross-lagged structural equations over five biennial waves of data, in four overlapping samples of Australian mothers reentering work between child ages 0-1 to 8-9 (N range: 1027-2449). Our findings revealed that work-family conflict and psychological distress are distinctive aspects of mothers' wellbeing that influence each other over time. Reciprocal influences were not confined to one period of parenting but continued as children grew older. Associations persisted after controlling for a range of work and family characteristics, and there was no evidence of mediation by family socio-economic status, maternal age, or job quality. Findings suggest that employed mothers may benefit from policies and workplace practices that both promote maternal wellbeing and reduce conflicts between employment and raising children.

Keywords: Mental health < Well-being >; Parenting < Parenting and Parenthood >; Work Family Balance < Families and Work >; Multiple roles < Work Family Balance < Work Family Conflict >; Structural equation modeling < Method >.

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In developed countries, most parents manage two major life roles simultaneously: raising children and participating in paid work. 'Work-family conflict' (WFC) refers to the challenges posed by juggling these role demands. High WFC has been shown to have significant social and economic costs to employers, individuals and their families (Eby et al. 2005). Although psychological distress is often studied as a consequence of WFC, the nature of the relationship between WFC and psychological distress remains unclear: do they affect each other and if so, is it at particular points in the family life-course or is it an on-going and potentially compounding process? We assess the nature and direction of the relationship between WFC and psychological distress for mothers from the postpartum for 8-9 years across the early family lifecycle using data from a large cohort of Australian families and a cross-lagged structural equation modeling approach.

Work-family conflict (WFC) can occur in two ways: work can interfere with family (work-to-family conflict) and family can interfere with work (family-to-work conflict). Work-to-family and family-to-work conflict share a strong positive relationship and represent a global construct ('work-family conflict') (Byron 2005, Michel et al. 2011), that has significant social implications. WFC has been shown to adversely impact on the effectiveness of organizations (e.g., reduced productivity and increased staff turnover; Eby et al. 2005); and has substantial effects on the wellbeing of individual employees, including increased risks for depression, physical health complaints, and substance abuse (Eby et al. 2005). There is also growing evidence of broader impacts of WFC on the families of employees. For example, WFC is associated with reduced satisfaction with family and the couple relationship, and high levels of family distress (Frone et al. 1997). Mothers' job demands have been shown to be related to negative interactions with their children (Bass et al. 2009, Cooklin et al. 2014,

Cooklin et al. In press), to a degree that influences children's mental health outcomes (Strazdins et al. 2013). Parent mental health is one of the most important determinants of parenting, family functioning, and children's wellbeing and development (Romano et al. 2005, Low and Stocker 2005). Thus, the relationship between WFC and psychological distress has important, wide-ranging implications beyond the health and wellbeing of individual employees, and is likely to have implications for broader family functioning and child developmental outcomes.

Nevertheless, the nature of the relationship between WFC and psychological distress is not well understood. With some recent exceptions, research in this field has been cross-sectional and descriptive, limiting understanding of the extent to which interactive processes exist and whether these occur largely within a particular parenting period or pose problems for mothers' wellbeing (and potentially children's) irrespective of child age. The way these factors relate to each other concurrently and over time has implications for how best to support parents to combine work with their caregiving roles at different life stages (Grzywacz et al. 2002). In this study, we seek to establish the nature of the relationships between mothers' work-family conflict and psychological distress across the family life-course. We use a step-wise model testing approach to capture the full range of mothers reentering the workforce between the early to mid-parenting years. We also examine whether the associations we observe can be explained by mothers' individual or family context or if they vary by family socio-economic status.

The Gendered Nature of Work-Family Roles in Australia

There are clear cross-country differences in the gendered nature of work-family contexts. Employed mothers in Australia typically bear a disproportionate share of household and child care responsibilities in comparison to employed fathers (Craig et al. 2010, Craig and Sawrikar 2009). Gendered expectations and workloads are most salient in the early stage

of the family lifecycle when care demands are high and the corresponding division of paid and unpaid labor between mothers and fathers is often inequitable (Bianchi and Milkie 2010, Craig and Mullan 2010, Craig et al. 2010). In general, Australian mothers of infants and pre-school aged children have lower employment participation (46%) compared to all mothers of dependent children (<15 years, 69%), and all mothers participate at lower rates than fathers (Australian Bureau of Statistics 2011). Hence, employed Australian mothers are more likely to shoulder much of the caregiving responsibility, and their experience of conflict may be particularly important for family functioning and child outcomes. In our review of the literature, below, we have therefore attempted to focus on maternal outcomes, although this was not always possible due to a lack of gender-specific research.

Review of Previous Research Investigating WFC and Psychological Distress

To date, the majority of theory and empirical research has assumed and tested for a linear 'cause and consequence' relationship between WFC and psychological distress (De Jonge et al. 2001), although the nature of most of these data precludes causal inference. We summarize evidence suggesting that WFC leads to psychological distress but also present some evidence that indicates the reverse, i.e., that psychological distress can lead to WFC. To capture this 'bidirectionality' in the present study, we use the term *reciprocal effects* to describe mutual influences over time. Although widely referred to in the literature as *reciprocal causation* (Lu 2011, Kouvonen et al. 2008, Kalimo 2005, Berkman et al. 2010, Dormann and Zapf 2002, de Lange et al. 2005), we acknowledge that ours and others' longitudinal analyses cannot supply proof of causality.

Theory and evidence regarding the direction of association between WFC and psychological distress. Studies testing the influence of WFC on psychological distress tend to have drawn on Family Stress and Resilience Theory (Conger et al. 2002), the Job Demands-Resources Model (Bakker and Demerouti 2007), or the Conservation of Resources Model

(Grandey and Cropanzano 1999). Broadly, these theories suggest that families exhibit variation in their access to and utilization of resources to cope with stress and external demands (Grzywacz and Bass 2003).WFC is conceptualized as a demand which, depending on the resources available to families, may generate poor mental health outcomes for parents. There is considerable empirical research supporting a WFC to psychological distress pathway, although the majority of studies employ cross-sectional or two-wave repeated measures designs, limiting their capacity to test across multiple waves. Only two studies have examined mothers specifically, and both show that WFC is a strong predictor of psychological distress for mothers in the postpartum period (Killien et al. 2001), and for mothers of young children (Goodman et al. 2009).

In contrast, the Affective Events Theory (Weiss and Cropanzano 1996) has been applied to explain a pathway from psychological distress to WFC. In this model, psychological wellbeing is regarded as a key determinant of an employee's reactions to workplace events, which in turn influences work attitudes and experiences (Miner et al. 2005, De Jonge et al. 2001), including perceptions of WFC. A distress to WFC pathway is supported by several cross-sectional studies which show that employees who report less negative affect report less WFC (Carlson 1999, Stoeva et al. 2002).

Reciprocal influence: WFC and psychological distress as a mutually reinforcing system. Several studies have tested for reciprocal relationships, using limited longitudinal designs (e.g., Demerouti et al. 2004, Panaccio and Vandenberghe 2009). For example, Kinnunen et al. (2004) found a relationship between WFC and psychological distress over one year in a small sample with different patterns for fathers (N=208) and mothers (N=218). For fathers, distress preceded later elevations in WFC, whereas for mothers WFC preceded psychological distress and job dissatisfaction. In a two-wave panel study of German workers

(N=130 over two waves), Steinmetz et al. (2008) demonstrated reciprocal effects between depression and work-to-family interference.

Cross-lagged longitudinal designs are viewed as the most robust method for addressing questions of directionality and reciprocal effects (Taris and Kompier 2003). Innstrand et al. (2008) used structural equation modeling (SEM) and a cross-lagged longitudinal study design, and found evidence of reciprocal influences between work-family conflict/facilitation and burnout over 2 years, in a Norwegian sample of 2,235 employed parents. They found that WFC at time one predicted burnout at time two; although exhaustion at time one predicted greater WFC at time two. Differences between fathers and mothers were not examined. Conversely, Rantanen et al. (2008) found little support for reciprocal relationships between WFC and psychological distress in a two-sample study using a one-year (n=365) and six-year (n=153) time-lag respectively, with the primary influence flowing from WFC to psychological distress at both follow-up waves. No differences between mothers and fathers were found. No studies to date have examined whether reciprocal associations between WFC and parents' psychological wellbeing continue over multiple stages of the family life-course.

Life-Course Specific versus Ongoing Influences?

Generally it is assumed that the birth of an infant heightens the work-family dilemma for mothers. Unpaid care work increases dramatically at a life stage (early-to-mid career) when increased investment to generate income and establish a career is a necessity (Erickson et al. 2010, Martinengo et al. 2010, Huffman et al. 2013). The postpartum period may be the most likely period for a mutually reinforcing relationship between work-family conflict and psychological distress to occur. It is a time when mothers must not only negotiate caring for a new baby but also reenter the workforce. Mothers and families are often under-resourced in offsetting these demands, which may precipitate cognitive, emotional and time-based strains

(Huffman et al. 2013). Several studies of postpartum mothers lend support to this hypothesis, consistently showing that work-family conflict and higher depressive symptoms are associated (Marshall and Tracy 2009, Grice et al. 2007, Dagher et al. 2009), although one study indicates that WFC precedes onset of depressive symptoms (Grice et al. 2011). To-date, these studies have been limited to the early postpartum weeks, and shed little light on whether these influences are on-going.

It is also possible that mutually reinforcing relationships between WFC and psychological distress continue throughout the early childhood and primary school years. If this is the case, then the experience of WFC or psychological distress at any point could precipitate an ongoing system of mutual influence. For mothers, flexible and 'family-friendly' workplace provisions targeted at parents with infants are no longer available 4-5 years later (e.g., paid parental leave), and flexible working arrangements remain at the discretion of individual employers in Australia, with low access rates (Skinner et al. 2012). School hours are poorly matched to working hours, and care arrangements are hard to secure at irregular times such as school holidays or when children are sick (Martinengo et al. 2010). Likewise, parenting roles evolve throughout childhood, shaped by and interacting with a wide range of child and contextual factors (Conger et al. 2010, Kiff et al. 2011, Belsky 1984, Johnson et al. 2013). To an extent, mothers are more practiced at negotiating the stresses of work-family conflict by the time they have an older child compared to an infant; nevertheless, external constraints linked to career demands, time pressures and child care still operate. Mothers typically increase their work hours when children enter formal education and thus work-related pressures may increase at this time.

The Current Study

To address current gaps in the literature, we employ a systems framework (Kalimo 2005), to test for reciprocal relationships between mothers' WFC and psychological distress
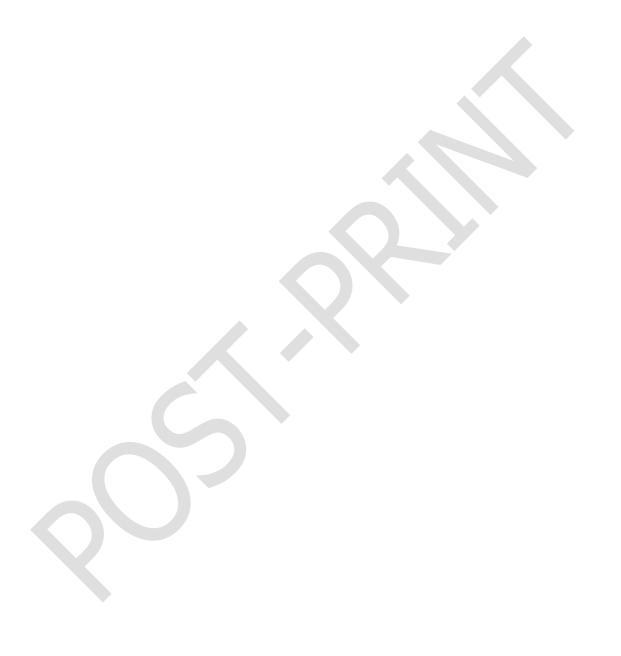
that may vary in strength and direction at different waves (Sterman 2000, Trochim et al. 2006). We use a longitudinal structural equation modeling (SEM) cross-lagged approach (Lang et al. 2011, Hülsheger et al. 2010) and five waves (i.e., time-points) of data from the Baby (B) cohort of the Longitudinal Study of Australian Children (LSAC). Mothers' WFC and psychological distress were measured at two yearly intervals commencing when the LSAC study child was an infant (0-1 years) up to age 8-9 years. Cross-lagged modelling requires data on the key variables of interest (WFC and psychological distress) at each wave of data collection. However, the number of Australian women who return to work within the first year of having a child and then remain continuously employed for the next 8 years is relatively small. To test cross-lagged effects, we therefore constructed four overlapping samples of women representing those who had returned to sustained employment up to the child's age of 8-9 years, with this period commencing when the child was 0-1 years, 2-3 years, 4-5 years, or 6-7 years old. Cross-lagged effects were then tested across all available waves for each sample (see Figure 1).

We sought to answer the following research questions:

1. *Are there reciprocal effects between maternal work-family conflict and psychological distress over time?* The aim is to investigate these relationships for as many employed mothers as possible, to capture mothers entering the workforce at different waves in the early-to-mid parenting years. We used an iterative approach, drawing on data from four overlapping samples of mothers returning to sustained employment when their child was 0-1, 2-3, 4-5 or 6-7 years. Consistent with previous studies (Steinmetz et al. 2008, Innstrand et al. 2008, de Lange et al. 2005, Meier and Spector 2013), we expect that there will be reciprocal effects between WFC and psychological distress for employed mothers.

2. *Is the relationship between work-family conflict and maternal psychological distress explained by other factors related to mothers' family, work and individual context?* It is well established that family contexts change over time, with mothers facing different demands according to their children's ages and developmental stages, family size and family structure. It is therefore important to determine whether the characteristics of mothers, their families and their workplace explain associations between WFC and psychological distress (Kiff et al. 2011, Parke and Buriel 1998). In order to address our aims more fully, we compare our initial model with a second model adjusted for maternal, child, family and work characteristics that might explain our findings. Socio-economic position, family type and number of children, work hours, and job quality are established determinants of WFC (Michel et al. 2011), including during the postpartum (Grice et al. 2011, Usdansky et al. 2012). Studies have shown that parents of children with disabilities and chronic illness are more likely to report psychological distress than parents of typically-developing children (Bourke-Taylor et al. 2012). Finally, we control for mothers' age, given that young maternal age is associated with increased risk of mental health problems (Cooklin et al. 2011).

3. *Is the relationship between work-family conflict and psychological distress different for mothers experiencing socio-economic disadvantage, young mothers, or mothers experiencing low-to-moderate job quality?* According to family resilience and stress theory (Conger et al. 2002), demands on parents become risk factors for mental health when family resources are inadequate. It is possible that risk factors such as socio-economic disadvantage, young maternal age, or low-to-moderate job quality will amplify the mutually reinforcing influence between maternal work-family conflict and psychological distress. These three variables have previously been shown to be

associated with poor maternal mental health, parenting or family difficulties. We will

use multiple group analyses to test for group differences on these variables.

METHOD

Study Design

The Longitudinal Study of Australian Children (LSAC) is a nationally-representative prospective cohort study of Australian children and their families. Children were selected from Australia's universal health insurance database (Medicare) using a two-stage cluster sampling design (Soloff et al. 2005). The families of 5,107 infants (64% initial response rate) in the Birth (B) cohort participated in 2004. Data used in our study were collected via parent report in face-to-face interview or paper or computer-based questionnaires. The B cohort was recruited when children were 0-1 years (Wave 1); and followed biennially at 2-3 years (Wave 2; 90% retention from interview, 77% retention for questionnaire), 4-5 years (Wave 3; 86% retention from Wave 1 for interview, 87% retention for questionnaire), 6-7 years (Wave 4; 82% retention from Wave 1 for interview, 99% retention for questionnaire), and 8-9 years (Wave 5; 80% retention from Wave 1 for interview, 98% retention for questionnaire) (Australian Institute of Family Studies 2013). LSAC was approved by the Australian Institute of Family Studies Ethics Committee (Gray and Sanson 2005, Soloff et al. 2006).

Participants

Mothers were included in the current study if they ever reported being in paid work and were the biological (>99%) or step/adoptive mothers (<1%). The final analytic sample consisted of four overlapping samples of mothers, defined according to the timing of their re-entry into paid work following the birth of their reference child in LSAC, where one individual participant could appear in 1, 2, 3 or all 4 samples. Sample 1 represented the largest group of mothers – those working at two assessments when their child was 6-7 and 8-9 years (N=2449). Sample 2 comprised mothers working at three assessments from child age 4-5 to 8-9 years (N=1859); sample 3 at four assessments from child age 2-3 to 8-9 years (N=1465); and sample 4 at all five assessments from child age 0-1 to 8-9 years (N=1027).

Mothers were excluded if they had more than half their data missing across items on the work-family or the psychological distress measures at any wave, were not in sustained employed, or were on maternity leave at more than one wave within each defined period.

Table 1 presents descriptive statistics for mothers in each of the four analytic samples, compared to mothers employed for at least one wave but excluded due to not being in sustained employment or having a high amount of missing data. Across most variables, mothers who were consistently employed tended to be more socio-economically advantaged relative to mothers who were excluded or less consistently employed. Mothers not included in the analytic sample tended to be younger, have more children, and were more likely to be classified in the lowest quartile for socio-economic position, be a single mother or non-biological father family, speak a language other than English at home, and be overseas born. These differences were significant when excluded mothers were compared to the largest and most representative sample of included mothers (sample 1, mothers in sustained employment when their child was 6-7 to 8-9 years), but were most pronounced when compared to sample 4, for mothers returning to work in their child's first year of life and remaining employed through to 8-9 years. The greatest differences were present for socio-economic position (SEP). Almost 1 in 3 excluded mothers were in the lowest population quartile for SEP, compared to less than 1 in 7 included mothers in sample 4.

Measures

Primary outcome variables. Work-family conflict (WFC) was measured at each wave using a four-item adaptation of the measure developed by Marshall and Barnett (1993). The original measure comprised two four-item subscales assessing family-to-work interference and work-to-family interference. In LSAC, two items from each subscale were administered. Family-to-work conflict was assessed with the items *"Because of my family responsibilities… My work time is less enjoyable and more pressured"* and *"I have to turn down work activities*

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or opportunities that I would prefer to take on". Work-to-family conflict was assessed with *"Because of my work responsibilities... I have missed out on home or family activities that I would like to take part in"* and *"my family time is less enjoyable and more pressured"*. Respondents indicated their extent of agreement with each item on a rating scale ranging from 1 = *strongly disagree*, to 5 = *strongly agree.*

Maternal psychological distress was assessed at each wave using the Kessler-6 (K6), a brief psychosocial screening tool which measures the frequency of symptoms of psychological distress over the previous four weeks (Furukawa et al. 2003). The K6 has six items, where mothers were asked *"In the past 4 weeks about how often did you feel . . . Nervous; Hopeless; Restless or fidgety; That everything was an effort; So sad that nothing could cheer you up; Worthless"*. Items were rated on a 5-point likert scale from 1 = *all of the time*, to 5 = *none of the time*. The K6 has been shown to have consistently good-to-excellent psychometric properties and precision, and strongly discriminates between community cases and non-cases of DSM-IV disorders (Kessler et al. 2002).

Model covariates. A range of maternal, family and work factors were collected via maternal report in a face-to-face interview or via questionnaire at each wave. Mothers reported on their age, child's age, number of children in the family, primary language spoken in the home, mothers' country of birth, mothers' work hours, and job quality. Mothers rated their child's global health on a 5-point likert scale from poor to excellent (Landgraf et al. 1996). Socio-economic position (SEP) was a continuous, composite variable, ranking family position based on household income, education and occupational prestige, with higher scores indicating higher socio-economic position (Blakemore and Strazdins 2009). This continuous variable was used in the analysis in three ways: (1) divided into quartiles at baseline using the full sample and population weights to compare the included and excluded samples; (2) a continuous variable measured at each wave as a covariate in the adjusted analyses; and (3)

divided at the 50th percentile within the full population sample at wave 4 to create two groups

for the moderation analyses.

Job quality was measured at each wave using the Job Quality Index (JQI) (Strazdins

et al. 2007). The JQI consists of four work condition variables: Family friendly leave (4

items, e.g., *Does parent's employer provide parent with paid holiday or recreation leave?*);

Flexible hours (1 item, *If you sometimes need to change the time when you start or finish*

your workday, is this possible?), Job control (1 item, *I have a lot of freedom to decide how I*

do my own work), and Job security (1 item, *How secure do you feel about your job or career*

in your current workplace?). Each work condition variable was recoded into a dichotomous

variable so that 0= unfavorable and 1= favorable work condition. Recoded scores were

summed to create total job quality, ranging from 0 to 4 with higher scores indicating higher

job quality.

Analyses

Data preparation. Variables were derived and imputed in Stata version 13.1 using the

survey methods procedure to weight the analyses for participants' unequal probability of

selection into the sample, and the multi-stage, clustered sampling design (StataCorp 2011,

Frazier et al. 2004). Data were imputed to handle missing data at the item level. One of the

four WFC items was not collected at wave 2 due to a printing error in the self-report

questionnaire, and was also imputed for the whole sample. Otherwise, missing data on WFC

and psychological distress items ranged between 0 and 26% for each item (the majority with

<5% missing). Multivariate multiple imputation was performed separately for each sample

using an iterative Markov Chain Monte Carlo (MCMC) method, using a fully conditional

specification (ICE 'chained' method). The augmented-regression option was used to handle

perfect prediction, given the large number of categorical variables in our final models. The

imputation models included all WFC and psychological distress items, all model variables,

additional socio-demographic variables, cross-sectional and longitudinal sample weights, and cluster variables (postcodes and strata) entered as 'regular' non-imputed variables into the imputation equations. Thirty imputations for each dataset were requested and successfully produced for each sample.

Cross-Lagged Structural Equation Models

The study research questions were examined via a SEM framework using Mplus version 7 (Muthén and Muthén 1998-2010). To account for sample attrition, analyses were weighted using cross-sectional weights for the first available wave for samples 1-3, and wave 5 longitudinal weights for sample 4. The Mplus stratification and cluster options were applied to account for the complex survey design (Sipthorp and Daraganova 2011). As our data were ordinal and non-normally distributed, the robust weighted least squares (WLSMV) estimation method was used (Finney and DiStefano 2006). Five fit indices are reported: the chi-square goodness of fit statistic, root-mean-square error of approximation (RMSEA), comparative fit index (CFI), Tucker–Lewis index (TLI), and the Weighted Root Mean Square Residual (WRMR). Given that the chi-square statistic is less informative with skewed data and large sample sizes (Byrne 2012), we focus on the RMSEA, TLI, CFI, and WRMR to determine appropriate fit for our models. The RMSEA is an absolute measure of fit which takes into account model complexity; values <.05 indicate good fit (Byrne 2012, MacCallum et al. 1996). The CFI and the TLI are both incremental fit indices which are sensitive to misspecifications in simple models and less sensitive to distributional properties and sample size; values >0.90 indicate acceptable fit, and values >0.95 indicate good model fit (Hu and Bentler 1999). The WRMR is a suitable for categorical outcomes, and smaller values (<0.90) indicate good fit (Muthén 1998-2004).

Measurement models: A calibration sample with 50% of mothers from sample 4 was used to establish the cross-sectional and longitudinal measurement properties of the

constructs (N=514). Confirmatory Factor Analysis (CFA) was conducted to establish the separate measurement models for WFC and for psychological distress, and to test for discriminant validity between these two constructs. In calibrating measurement models, minor modifications were considered for poorly fitting models, and applied when justifiable on theoretical grounds. A single parameter (the error covariance between items 1 and 2) was added to the CFA models for WFC across all waves, resulting in consistently good fit. This posthoc adjustment was assessed to be substantively meaningful, given that the 4-item WFC measure represents two underlying subscales, and these covaried items represent the family-to-work conflict scale. The cross-sectional CFA models for the psychological distress constructs at each wave had good fit with no adjustments necessary. Discriminant validity was demonstrated between WFC and psychological distress at all waves using the Wald chi-square test of parameter equalities, with p<0.001 for all tests (Muthén and Muthén 2012).

Measurement invariance procedures were used to assess the stability of WFC and psychological distress over time, using the delta parameterization procedures for categorical data as outlined by Muthén and Muthén (1998-2010). To establish structural invariance, models across the five waves were run separately for each measure with time adjacent residuals correlated. Configural invariance (whether the factor structure of each variable was consistent across waves) was tested by allowing thresholds and factor loadings to be freely estimated over time, with scale factors fixed at one and factor means fixed at zero. Metric (whether the item loadings were consistent across waves) and scalar (whether the thresholds were consistent across waves) invariance were tested by constraining the factor loadings and thresholds to be equal across time. The DIFFTEST option in Mplus was used with a randomly selected imputed dataset (and consistency checked across 9 other datasets) to produce a chi-square difference test for use with robust estimation methods (significance p<0.05). Fit indices for the measurement invariance models are presented in Appendix 1.

Both measures achieved full metric and partial scalar invariance. For psychological distress, thresholds for item 1 ("*Felt nervous"*) at waves 2 and 5; item 2 ("*Felt hopeless*") at wave 2, item 3 at wave 5 ("*Felt restless or fidgety*"), and item 4 (*Felt everything was an effort*") at wave 5 were freely estimated. For WFC, item 3 ("*Because of my family responsibilities... I have had to turn down work activities or opportunities that I would prefer to take on")* at waves 4 and 5 was freely estimated.

Primary Analysis

Research question 1: Four competing models were tested for each sample, each assuming different associations between WFC and psychological distress. Model 1 was the stability model, which included regressing factors for WFC and psychological distress at earlier waves on to subsequent waves. In Model 2, lagged effects of WFC at each wave to psychological distress at each subsequent wave were added to the stability model. In Model 3, lagged effects of psychological distress to WFC were added to the stability model. Finally, in Model 4 the cross-lagged effects of WFC and psychological distress were simultaneously added to the stability model. For all models, a correlation was included between WFC and psychological distress at the first wave, and cross-sectional correlations between these constructs at waves 2-5 (as applicable). To establish the best fitting model, Models 2 and 3 were compared to Model 1; and then the best fitting model from Models 1-3 was compared to Model 4. Model improvement was assessed using the DIFFTEST option.

To investigate whether the relationship between WFC and psychological distress differed systematically between the most representative (sample 1) and least representative (sample 4) of the included samples, multiple group analysis was performed to compare the relationship between WFC and psychological distress across the two waves where both samples had data available (child ages 6-7 and 8-9 years).

Research question 2: Adjusted analyses were run for the final best fitting model for each of samples 1-3. Sample 4 had insufficient sample size to run an adjusted model involving 5 waves of data. Covariates were: mothers' age at baseline and concurrent measures of family structure, child health, number of siblings, mothers' work hours and job. For each sample, the 'concurrent' covariates included in the model were measured at the first measurement time-point for WFC and psychological distress: 6-7 years for sample 1, 4-5 years for sample 2, and 2-3 years for sample 3.

Research question 3: Potential moderators of the relationship between WFC and psychological distress (socio-economic position, maternal age, and job quality measured at child age 6-7) were examined using multiple group analyses. Analyses were conducted separately for each potential moderator using sample 1 only (mothers reentering employment by 6-7 years) to maximize the analytic sample available.

RESULTS

Reciprocal Cross-Lagged Structural Models

Model fit indices for the four alternative cross-lagged models are presented in Appendix 1. The stability models (Model 1) were a good fit to the data for all samples. The addition of lagged pathways from WFC to psychological distress (Model 2) improved model fit for all of the samples. The addition of lagged pathways from psychological distress to WFC (Model 3) improved model fit for sample 1, with some limited evidence of improved fit for sample 3. In all cases, the addition of reciprocal cross-lagged effects in Model 4 resulted in improved model fit. The reciprocal cross-lagged models were thus accepted as the best-fitting and most parsimonious models for all samples.

Figure 2 presents standardized correlation and regression estimates from the final reciprocal effects models (Model 4) for each of the four samples. Both WFC and psychological distress appeared to be very stable across time: large associations between time-adjacent measures for samples 2-4 (mothers reentering sustained employment by child ages 4-5 years, 2-3 years and 0-1 years respectively) and moderate associations for sample 1 (those reentering employment by child age 6-7 years). Across all four models, there was a moderate correlation between WFC and psychological distress at the first measured wave, and a small correlation at the final measured wave. There was evidence for reciprocal effects between WFC and psychological distress in the models for all four samples. Across the four models, there were three instances of WFC predicting subsequent psychological distress: between child ages 2-3 and 4-5 years (sample 4); 4-5 and 6-7 years (samples 2 and 3); and 6-7 and 8-9 years (samples 1, 2 and 3). There were also three instances of psychological distress predicting WFC: between ages 0-1 and 2-3 years (sample 4); 2-3 and 4-5 years (samples 3 and 4); and 6-7 to 8-9 years (samples 1, 2, 3 and 4). There was evidence for

bidirectional (cross-lagged) effects between child ages 2-3 and 4-5 years, and between ages 6-7 and 8-9 years.

In general, the presence and strength of these effects were consistent across the four models, with three exceptions involving sample 4 (reentering employment at 0-1 years). First, in the model for sample 4 there was evidence that maternal WFC at child age 2-3 years predicted subsequent psychological distress at age 4-5 years. This was not evident at the same waves for sample 3. Second, in the models for samples 2 and 3, there was evidence that maternal WFC at child age 4-5 years predicted subsequent psychological distress at child age 6-7 years; this effect was not evident in the model for sample 4. Third, in the models for samples 1, 2 and 3, there was consistent evidence that maternal WFC at child age 6-7 years predicted subsequent psychological distress at child age 8-9 years. In the sample 4 model, this was not statistically significant.

Multiple group analysis was performed to test whether any differences between the findings from sample 1 (i.e., the most population-representative sample of mothers) and sample 4 (i.e., the smallest sample, but with mothers in sustained employment for the longest period of time) were likely to reflect real underlying differences or whether differences may have been an artifact of the data, e.g., related to reduced sample size and increased complexity of the model for sample 4. Full metric and partial scalar invariance was established between the two samples and the WFC and psychological distress measures at child ages 6-7 and 8-9 years (the two waves where both samples had available data). The multiple group test revealed no significant group differences in the relationship between WFC and psychological distress over these waves (Δx^2 (df) = 7.56(6), p=0.27).

Influence of Parent, Child, Family and Work Factors

Table 2 presents standardized correlation coefficients from the adjusted models for samples 1-3. The results were generally consistent across the three samples. At baseline (i.e.,

at child age 0-1 years) older maternal age was consistently associated with greater WFC in all three samples, and associated with lower psychological distress in the first two samples. The remaining covariates were measured at the entry time-points for each sample, concurrent to the first measurement of WFC and psychological distress (i.e., at Wave 4 at child age 6-7 years for sample 1; Wave 3 at child age 4-5 years for sample 2; and Wave 2 at child age 2-3 years for sample 3). Higher socio-economic position was consistently associated with higher WFC and lower psychological distress in all three models, and the associations with WFC were twice as large as with psychological distress. Single mother or non-biological father family status and poorer child health were both associated with higher WFC and psychological distress consistently across all models, and these associations were stronger for psychological distress. In contrast, the number of siblings in the house was not associated with these outcomes in any of the models. Higher work hours for mothers was associated with higher psychological distress, but was not consistently associated with WFC, whereas higher job quality was consistently associated with lower psychological distress, and not with WFC.

Table 2 also presents a comparison of the adjusted and unadjusted lagged effects between WFC and psychological distress for each of the samples. Although the standardized regression coefficients were consistently reduced in all of the adjusted models, the differences between adjusted and unadjusted effects were very small, with most effects maintaining a significant contribution to the model.

Group Differences

Multiple group analysis conducted with sample 1 (reentering employment by child age 6-7 years) was used to test for group differences across three potential moderating variables. Measurement taken at child age 6-7 years was used for each variable, and final cut-

points were selected to ensure a sufficient sample size for SEM within each group, as follows:

1. Socio-economic position: 34% of mothers in the final analysis in sample fell below the cut-point, while 66% 1 fell at or above the 50th percentile cut-point (calculated within the full population-representative sample).

2. Young mothers: 72% of mothers fell in the top two-thirds for maternal age (calculated within the full population-representative sample), compared to 28% in the lowest third.

3. Job quality: 68% of mothers reported low-to-moderate job quality compared to 32% who reported the highest rating for job quality.

Full metric and partial scalar invariance was established between the two samples for each potential moderating variable. Final unadjusted models with reciprocal effects were compared for each variable's subgroups. We found no significant subgroup differences between mothers in the low and high socio-economic groups (Δx^2 (df) = 6.956(6), p=0.325); young compared to older mothers (Δx^2 (df) = 8.363(6), p=0.213); or mothers with moderate-to-low versus high job quality (Δx^2 (df) = 6.318(6), p=0.389).

DISCUSSION

The current study sought to investigate the presence and continuity of reciprocal effects between work-family conflict (WFC) and psychological distress over eight years of the early parenting period. Using an innovative step-wise modeling approach, we accounted for the heterogeneity of return to work typical in Australian mothers (Australian Bureau of Statistics 2011) by building four overlapping samples of mothers progressively reentering employment between child ages 0-1 and 6-7 years. For all four samples, cross-lagged models testing reciprocal paths showed optimal fit to the data and yielded a similar pattern of relationships between variables. Specifically, there was very strong continuity over time for mothers' WFC and psychological distress, and consistent evidence of reciprocal influences between them.

We established the robustness of the relationships between WFC and psychological distress by adjusting for variables that could account for their association, including maternal, child, family, and work factors. The models were largely unaffected by inclusion of job quality, mothers' work hours, mothers' age, family size and structure, socio-economic position, and child health. Similarly, we repeated the modelling to see whether the associations between WFC and psychological distress differed for subgroups of mothers who had reentered the workforce by the time their child was in school (ages 6-7 years); young mothers; those from low socioeconomic households; or mothers experiencing poor job quality. There was no evidence of variations in the reciprocal relationships between WFC and psychological distress by any of the subgroups examined, indicating that limited maternal resources did not substantially alter the nature of these relationships, and attesting to the potential wide applicability of our findings.

The stepped approach we applied to analyzing multi-wave data has enabled our study to provide new evidence of the complex interrelationships between employed mothers' WFC

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and psychological distress over the first eight years of parenting. It may have been expected that as mothers gain more experience at being both a parent and an employee, they would cope better with WFC over time, or that the negative interplay between WFC and psychological distress would be either heightened by, or confined to, a specific life-course stage. In contrast, we found that conflicting work and family roles showed a similarly adverse impact on mothers' subsequent wellbeing when their children were toddlers, preschoolers and school-age. Likewise, mothers' experience of psychological distress affected their reported levels of WFC two years later, for mothers of infants, toddlers and school age children.

The largest cross-lagged effect in the models was found for WFC at age 2-3 years predicting maternal distress at 4-5 years, present for mothers who reentered work in their child's first year of life (sample 4) but not for mothers reentering work by the time their child was 2-3 years (sample 3). The cause of this discrepancy is unclear, although sample 3 included 400+ additional mothers over sample 4 (N=1465 versus 1027 respectively). Likewise, small differences in the final models for sample 4 compared to the other three samples may be partly due to sample size (sample 4 contained the smallest number of mothers). When we investigated whether the relationship between maternal work-family conflict and psychological distress was affected by the timing of mothers reentering employment in the last two waves (ages 6-7 and 8-9 years; for which all samples had data), we found no differences in the relationships between these variables for mothers who returned to work when their children were aged 0-1, compared to mothers reentering work any time from birth to age 6-7 years.

Contribution to Theory

Our study was one of the first to utilize a study design allowing multiple theories to be tested, and the findings challenge previous conceptualizations of the relationship between maternal WFC and psychological distress in three major ways. First, our analyses confirm

that WFC and psychological distress are distinctive constructs (that is, one is not a proxy for the other) and therefore should be conceptualized and treated as such in research or intervention. Second, our findings show that maternal WFC and psychological distress affect each other consistently across the first eight years of the family life-cycle. These ongoing reciprocal effects are suggestive of a more extensive and dynamic influence of WFC on employed mothers' wellbeing in comparison to the cause and consequence relationship posed by theories such as the Job Demands-Resources Model (Bakker and Demerouti 2007) or the Conservation of Resources Model (Grandey and Cropanzano 1999). Third, we found that these mutual and reinforcing influences are neither confined to, nor amplified by one particular stage of the family lifecycle; they could and did occur at any point over the eight years we examined. WFC and its potential to erode mothers' psychological health does not appear to reduce over the first eight years of raising children.

The findings strengthen the case that there is no simple, unidirectional relationship between WFC and distress (Steinmetz et al. 2008, Kinnunen et al. 2004, Innstrand et al. 2008). A range of maternal, child, family and work covariates (with the exception of family size) were found to be associated with WFC or psychological distress at each point in the family life-cycle. Low socio-economic position, single parent or step-family structure and longer maternal work hours were the strongest correlates of WFC over time; and single parent or step-family structure, poor child health and lower maternal job quality were the strongest correlates of psychological distress over time. The modelled relationships between WFC and psychological distress were robust to adjustments for the variables, and were similar when comparing subgroups potentially experiencing limitations on their resources (young mothers, those from low socioeconomic households and those with poorer job quality).

The consistency of these findings and the ongoing reciprocal effects between WFC and psychological distress suggest a persistent disconnect between the demands of parenting and the broader workplace and societal supports as children progress from infancy through preschool and into the early and middle years of primary school. Although infants require greater one-on-one care, this is typically managed by Australian mothers working reduced hours combined with the use of formal and informal child care (Bianchi and Milkie 2010, Craig and Mullan 2010, Craig et al. 2010). As children get older, Australian mothers progressively increase their part-time hours, informal child care use reduces, and children attend daycare, early education services and then school, with each successive setting having less flexibility regarding the child's days and hours of attendance. As children progress through primary school, their participation in out-of-school activities increases and may add further demands on their parents' time. Our findings indicate that even when the needs and activities of children change as they grow older, for mothers the conflicts with employment can continue.

Additionally, our findings showed that older maternal age and higher socio-economic position were associated with lower psychological distress but greater WFC. This may be due to older mothers being more advanced in their career with associated increased responsibilities and work hours. As mothers progress at work, they may face ongoing complexity in managing work-family demands, which may not be fully supported by the resources available to them from within and outside the workplace. While these mothers are not usually considered an 'at risk' group, our study points to WFC generating an evolving, on-going and detrimental pressure for their mental health if the conflicting demands are not resolved. The next stage for research will be to explore whether reciprocal effects between WFC and psychological distress drive exit from the workplace for some mothers.

Strengths and Limitations

The use of a cross-lagged longitudinal design with a two year time-lag was a key strength of our study, allowing assessment of mutual influence over time. Lags from eight months and up to 2 years are generally deemed to be acceptable for cross-lag designs (Rodríguez-Muñoz et al. 2009, Taris and Kompier 2003). The time-lag of two year intervals is relevant to the key periods associated with different phases of child development (e.g., infancy and early childhood, kindergarten, entering primary school), where two year intervals equate to a substantial change in the family lifecycle. Although the estimation approach leverages longitudinal data and addresses some concerns regarding temporal ordering, we acknowledge that it is not possible to establish true causality with observational data, and the results may also be vulnerable to selection bias due to unobservable characteristics.

The use of four overlapping longitudinal samples enabled inclusion of mothers reentering the workforce at different time-points. Nevertheless, mothers in each sample were included in the analyses if they were in sustained paid employment for at least two waves of data collection. Research suggests that mothers with mental health problems are more likely to withdraw from employment (Carlson et al. 2011). Our findings suggest that one reason for their vulnerability may be that their distress adds to the conflicts between working and raising children. Mothers who are able to return to and remain in work may also differ in terms of work commitment and satisfaction, available practical support, access to child care and more flexible employment conditions or financial pressures compared to other mothers who withdraw from work, or do not remain in consistent employment. Thus, we acknowledge that our sample may represent a comparatively well-functioning and more advantaged sub-group of employed Australian mothers. Our findings did not identify differences in the relationship between WFC and psychological by low and high socio-economic position groups within our included sample, and it is possible that socio-economic factors play a greater role in more diverse samples of mothers.

Another potential limitation of our study was the extent to which our findings are generalizable to other developed economies. Compared to Canada, Finland, Sweden, and the US, Australian mothers' participation in employment is relatively low (OECD 2011), and employed mothers also tend to work part-time. It is unclear whether maternal WFC and psychological distress will show similar associations in countries where full-time maternal employment is normative. We note however that longer work hours are important correlates for both WFC and psychological distress in our study, and these associations are also found in studies from a range of countries (for meta-analysis see Ford et al. 2007).

We confined our analysis to employed mothers' WFC and mental health, but an important next step is to investigate WFC and mental health among employed fathers. Fathers are extremely important in determining children's outcomes (Giallo et al. 2013, Johnson et al. 2013, Bögels and Phares 2008). Australian fathers are more likely than mothers to work long full-time hours in the early years of parenting, and are less likely to access employment conditions that offer flexibility for care of children (Skinner et al. 2012, Charlesworth et al. 2011). Indeed, organizational cultures often treat men's paternity as 'a ghost in the organizational machine', whereby parent-friendly policies are perceived to be targeted towards mothers rather than fathers (Burnett et al. 2012, Craig and Mullan 2010). It will be important for future work to examine the relationships between psychological distress and WFC for fathers, and also within couples.

Implications for Policy and Organizational Practice

Access to paid work supports gender equity and is an important family resource. For low income or single parent families, paid work is especially important for alleviating poverty. Engagement in the paid workforce therefore conveys substantial benefits to families and to mothers, specifically in relation to income, social capital, social support and skill development (Charlesworth et al. 2011). Nonetheless, there are costs associated with

employment participation, including the experience of work-family conflict, which policy to promote maternal labor force participation will need to address if it is to avoid adverse mental health impacts. The bulk of the extant WFC literature advocates for a focus on family-friendly work practices and environments, in line with theory and evidence that WFC leads to psychological distress (Shockley and Allen 2007, Ngo et al. 2009, Hammer et al. 2009). Conversely, an alternative model calls for intervention efforts focused towards supporting mothers by treating mental health problems or enhancing resilience and coping. Our findings suggest that both approaches would be beneficial and such a dual focus would provide the best model.

Further, it is likely that both preventative and problem-responsive approaches are required to effectively manage a downward WFC-distress spiral. This is consistent with broader job stress frameworks such as the Theory of Preventative Stress Management (Hargrove et al. 2011). Recent research shows that informal workplace family support (e.g., family-supportive supervision) has positive effects on employee mental health, as well as for work performance outcomes (Aryee et al. 2012). In addition to human resource management programs focused on successful return to work from parental leave, our study underscores the need for a sustained and longer-term focus on reducing conflicts between mothers' work hours, work conditions and their family demands. Work hours and job quality play an important role in the WFC-distress interplay, irrespective of children's age, indicating a need to include these aspects of employment alongside family leave policies and flexible work hours in an ongoing way. Thus, even as primary health care services, such as maternal child health services and general practitioners, could help with prevention and early intervention of mental health disorders as mothers return to employment (Lang et al. 2011); our study signals the need for workplaces and industrial regulations to be included as important elements in maternal mental health prevention and family interventions.

Conclusions

Our findings suggest that there are ongoing mutual influences between WFC and psychological distress, whereby deterioration in one can lead to ongoing detriment in the other. The converse may also be true; our findings suggest that action to reduce or prevent WFC or psychological distress among employed mothers could lead to positive spirals that would not only benefit mothers, but have flow-on benefits for children and most likely for workplaces. Our evidence that both constructs are influenced by a range of child, family and work variables consistently over time suggests a role for multi-modal intervention that moves beyond a 'treatment' of individuals to incorporate an assessment and 'treatment' of their work and family contexts. The published literature on organizational interventions to improve management of the work-family interface is extremely sparse, particularly for parents of young children, and intervention development and testing is essential to progress both research and practice in the field (Brough and O'Driscoll 2010). Given the extent of WFC in modern society, and with labor shortages predicted to exacerbate it (Skinner et al. 2012), there needs to be more attention and resources targeted to WFC interventions that are informed by the dual focus our study reveals.

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Table 1: Baseline Weighted Sample Characteristics (Child Age 0-1 Years) for Included and Excluded Participants

	Working mothers not in analytic sample (N=2223)	Analytic samples: Mothers in continuous employment over child ages:			
		Sample 1 6-7 to 8-9 years (N=2449)	Sample 2 4-5 to 8-9 years (N=1859)	Sample 3 2-3 to 8-9 years (N=1465)	Sample 4 0-1 to 8-9 years (N=1027)
	M (sd)	*M (sd)*	*M (sd)*	*M (sd)*	*M (sd)*
Mother's age in years	31.38 (5.14)	32.12 (4.69)	32.20 (4.60)	32.44 (4.47)	32.73 (4.29)
Child age in months	8.75 (2.63)	8.91 (2.57)	8.91 (2.56)	8.91 (2.58)	9.06 (2.48)
Number of siblings in the household	0.94 (0.98)	0.91 (0.92)	0.89 (0.92)	0.88 (0.89)	0.84 (0.89)
Lowest quartile socio-economic position	30.05%	21.41%	20.42%	17.70%	13.70%
Single mother or non-biological father family	6.89%	5.28%	5.48%	5.24%	4.74%
Language other than English	13.67%	11.19%	10.34%	9.39%	9.53%
Mother not born in Australia or New Zealand	17.01%	15.83%	15.16%	14.19%	15.64%
Mother's work hours[1]	21.13 (14.47)	22.70 (14.12)	22.77 (13.99)	23.03 (13.97)	22.64 (13.74)

[1] Data for mothers' work hours only available for N=926 mothers at the baseline assessment (wave 1).

Table 2: Final Reciprocal Cross-Lagged Models Adjusting For Parent, Child, Family and Work Characteristics.

	Sample 1: Entry by child ages 6-7 years, N=2449		**Sample 2:** Entry by child ages 4-5 years, N=1859		**Sample 3:** Entry by child ages 2-3 years, N=1465	
Baseline covariate (child 0-1 years)	*Correlation with WFC, r^2*	*Correlation with PD, r^2*	*Correlation with WFC, r^2*	*Correlation with PD, r^2*	*Correlation with WFC, r^2*	*Correlation with PD, r^2*
Mother's age	0.07**	-0.10***	0.13***	-0.08**	0.18***	-0.03
Concurrent covariates (measured at 'entry' time-point)						
Psychological distress (PD)	0.41***		0.39***		0.36***	
Increasing socio-economic position	0.21***	-0.08**	0.20***	-0.11**	0.21***	-0.06†
Single mother or non-biological father family	0.18***	0.24***	0.15**	0.27***	0.14*	0.30***
Poor child global health	0.11***	0.24***	0.10**	0.22***	0.12**	0.23***
Number of sibling in the household	-0.01	0.02	-0.03	-0.02	0.02	0.01
Mother's work hours	0.32***	0.03	0.33***	0.07*	0.33***	0.07†
Mother's increasing job quality	-0.05†	-0.16***	-0.03	-0.18***	-0.04	-0.14***
Lagged effects, **adjusted** *[unadjusted]*						
WFC (2-3 years) lagged on PD (4-5 years)					**-0.004** [0.03]	
PD (2-3 years) lagged on WFC (4-5 years)					**0.08** [0.10*]	
WFC (4-5 years) lagged on PD (6-7 years)			**0.08*** [0.10**]		**0.10*** [0.10**]	
PD (4-5 years) lagged on WFC (6-7 years)			**0.03** [0.04]		**0.03** [0.04]	
WFC (6-7 years) lagged on PD (8-9 years)	**0.08*** [0.09***]		**0.08*** [0.09**]		**0.07*** [0.07*]	
PD (6-7 years) lagged on WFC (8-9 years)	**0.09*** [0.11***]		**0.07*** [0.08**]		**0.06†** [0.07*]	
Adjusted model fit indices						
Mean x^2 (SD, df)	1787.066 (5.48, 304)		2511.795 (22.80, 600)		2691.517 (24.71, 994)	
Mean RMSEA (SD)	0.045 (0.000)		0.041 (0.000)		0.034 (0.000)	
Mean CFI (SD)	0.948 (0.000)		0.939 (0.001)		0.941 (0.001)	

Notes: Data in tables are standardized correlation coefficients from correlations between baseline or concurrent covariates with WFC and PD variables. Concurrent covariates were measured at the age when mother reentered employment: 6-7 years for sample 1; 4-5 years for sample 2; 2-3 years for sample 3. PD=psychological distress.
***p<0.001; ** p<0.01; * p<0.05; † p<0.10.