



# A Longitudinal Examination of Work–Family Balance among Working Mothers in the United States: Testing Bioecological Theory

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## Abstract

The current study used a bioecological framework to examine three moderated-mediation models testing the mediating effects of positive work-to-family spillover and positive family-to-work spillover in the relationship between a nonstandard work schedule and work–family balance as well as between relationship quality and work-to-family balance. The moderating effects of education, family–friendly workplace policies, and race in the aforementioned models also were tested. Path analyses were used with longitudinal data from four-time periods to test the models. Results showed family-to-work spillover mediated the relationship between relationship quality and work–family balance in two models, whereas the availability of family–friendly policies significantly moderated these relationships. Relationship quality was one of the most consistently significant variables across all models, suggesting its role in helping establish work-family balance is particularly influential regardless of context. Implications and directions for future research are discussed.

**Keywords** Bioecological theory · Path analysis · Relationship quality · Spillover effects · Work–family balance

## Introduction

Approximately 57% of full-time working parents struggle to maintain a healthy work–family balance (Pew Research Center 2015), wherein one can reasonably meet responsibilities and expectations raised by others in both work and family domains (Carlson et al. 2013). When one domain impacts the other, spillover occurs. Further, working mothers make up 47% of the current U.S. labor force (i.e., the percentage of the U.S. population who are currently holding a job plus those who are seeking a job; United States Department of Labor 2013), and this population increasingly finds it difficult to maintain a healthy work–family balance due to their additional family and childcare responsibilities (Bianchi et al. 2006) and challenges in the workplace (Lam et al. 2012). Women, especially those with young children and

male partners, often engage a majority of household chores and childcare activities (Perry-Jenkins and Gerstel 2020). This group of women also are more likely than their male partners to reduce their working hours or quit their jobs due to family responsibilities. This can impact family finances, add stress, increase conflict, and increase gender disparities (Perry-Jenkins and Gerstel, 2020; Raza et al. 2018). Accordingly, gender plays an important role in the experiences of these working mothers. We note although gender inequalities have decreased over the past few decades, they persist.

Working mothers experience several unique work–family challenges. For instance, current workplaces are less supportive of working mothers compared to working fathers (Lam et al. 2012). Often this is because employers perceive many working mothers have greater family demands, thereby must have a lower commitment to their jobs (Crowley 2013). Family demands refers to the family roles and responsibilities that a person must perform through a mental or physical effort (Voydanoff 2005). Additionally, the intersections of race, gender, education, and marital status further exacerbate these demands (Grzywacz et al. 2010). For example, single working mothers have less social and family support than dual-earner families; thus, they struggle to maintain a healthy work–family balance (Son and Bauer 2010).

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Moreover, due to the recent economic recession and the current pandemic, uncertainties exist in the job market. Unemployment rates have increased significantly, and many people have either lost their jobs or moved from full-time to part-time employment, thereby negatively impacting household finances (U.S. Bureau of Labor Statistics 2020). People are increasingly working a nonstandard work schedule (i.e., something other than 9 am–5 pm Monday–Friday; Grzywacz et al. 2010). Approximately one-fifth of employed Americans work a nonstandard work schedule (Presser and Ward 2011). Additionally, 43% of all children who live in a one-parent household have a parent that works a nonstandard work schedule, and that number increases to 50% for children living with two parents (Knop 2017). Those mothers who work on a nonstandard work schedule often have lower education levels and socioeconomic statuses and fewer alternative job opportunities (Lam et al. 2012) or flexibility with work times and days (Carlson et al. 2010; Garr and Tuttle 2012). These characteristics negatively affect their health and well-being (Kalil et al. 2014).

The current study fills three specific gaps in the literature. First, most previous work–family studies were cross-sectional and we know little about work–family balance over time. Second, research demonstrates some support for the impact of various contextual variables (e.g., education, family–friendly policies, and race), but the extent of impact on work–family balance is not well understood, especially longitudinally. Third, work–family research has a history of being well framed by ecological theories. However, more contemporary versions of bioecological theory have yet to be applied to the field (Tudge et al. 2009). Hence, the purpose of this longitudinal study is to test three moderated-mediation models, grounded in bioecological theory (Bronfenbrenner and Morris 1998), that explain the work–family balance of working mothers who have children between 4 and 9 years of age. More specifically, the current study examined the direct effects of a nonstandard work schedule and relationship quality on work–family balance. It also tested the mediating effects of positive work-to-family spillover and positive family-to-work spillover on the relationships between a nonstandard work schedule and work–family balance, and between relationship quality and work–family balance. The current model also examined the moderating effects of education, family–friendly workplace policies, and race on these relationships. Each model controlled for age, education, and race.

## Literature Review

### Work–Family Balance

As stated above, many working mothers experience challenges creating work–family balance. An empirical study that used a cross-sectional research design with a sample of 588 hotel managers (288 females and 300 male) found that working mothers faced work challenges, such as organizational time expectations, intense work schedules, role conflict, and job inadequacy, which affected their work–family balance (Lawson et al. 2013). Another study that used a daily diary research design with a sample of 105 mostly non-White mothers and their children found that full-time working mothers faced challenges with supervision of children, which increased their worries and kept them from maintaining work–family balance (Blocklin et al. 2012). Due to high work–family demands, women of young children also experienced role blurring that lowered their psychological well-being and led to a decreased level of marital satisfaction (Paulin et al. 2017). These results are similar to a study by Wattis et al. (2013), who conducted 67 in-depth interviews with employed mothers (most whom were full-time employed) who had children between 18 months and 15 years of age and found that work created challenges regarding caring for and supervising their children.

### Effect of Relationship Quality on Work–family Balance

A higher-quality relationship with a spouse/partner helps mothers maintain a healthy work–family balance (Curran et al. 2015). Relationship quality works as a buffer for mothers that prevents them from being overwhelmed by work responsibilities, and thereby increases their work–family balance (McMillan et al. 2004). A cross-sectional, dyadic study with cohabiting and married couples conducted by Symoens and Bracke (2015) found that poor relationship quality decreased work–family balance. Another cross-sectional study by O’Brien et al. (2014) used data from three countries (Israel, Korea, and the United States) and found that a lack of spousal support negatively affected the work–family balance of working women. This finding is consistent with Minnotte and Minnotte (2018), who examined 99 dual-earner couples from an upper Midwestern city in the United States; they found that a lack of support or partner strain created difficulties managing work–family responsibilities among women. Researchers also found that relationship strain due to spousal poor mental and physical health and behavioral disorders were associated with increased difficulties for women that spilled over into their work lives (Fettro and Nomaguchi 2018). The lack of a quality relationship with the spouse/

partner created a demand in the family for working women, thereby decreasing their work–family balance (Bakker et al. 2009; McAllister et al. 2012). In contrast, a quality relationship with the spouse can work as a resource for women, helping them maintain a healthy work–family balance (Curran et al. 2015; McMillan et al. 2004).

### **Effect of a Nonstandard Work Schedule on Work–family Balance**

Researchers who used a cross-sectional research design and national data consisting of mostly White individuals found that a nonstandard work schedule decreased work–family balance (Garr and Tuttle 2012). Similar results were found by Gassman-Pines (2011), who conducted longitudinal research with a sample of 61 low-income non-White mothers with preschool aged children. These results suggest that a nonstandard work schedule makes it harder for working mothers to maintain a healthy work–family balance. Additionally, researchers using a nationally representative sample of employed married adults who worked nonstandard work schedules found that the nonstandard work schedule created negative work-to-family and family-to-work spillover, thereby decreasing their work–family balance (Davis et al. 2008).

### **Mediating Role of Positive Work-to-Family Spillover and Positive Family-to-Work Spillover**

Researchers found that higher relationship quality can create positive family-to-work spillover that helps working mothers maintain a healthy work–family balance (Curran et al. 2015), wherein positive family-to-work spillover refers to positive experiences in the family that carry over into work and positively affect the work life (Sok et al. 2014). An empirical study using a randomized-controlled research design with a sample of 500 information technology companies showed that work-to-family spillover, created by supervisors' support and family–friendly workplace cultures, increased the work–family balance of working mothers (Kelly et al. 2014). A similar study, led by Grice et al. (2011), found that supervisors' support increased mothers' positive work-to-family spillover and resulted in improved work–family balance. Another study conducted by Curran et al. (2015), who used a longitudinal research design and a sample of 74 mostly White couples, showed that higher relationship quality with a partner/spouse increased positive family-to-work spillover, which improved the work–family balance of working mothers. Taken together, it appears that spillover is a mechanism that facilitates the impact on work–family balance by other process variables.

### **Moderating Role of Education, Workplace Policies, and Race**

Previous research has found that educated mothers were more likely to get a high-quality job and obtain schedule flexibility that would help them maintain work–family balance (Lawson et al. 2013). In contrast, less educated women were more likely to work a nonstandard work schedule, thereby decreasing work–family balance (Grzywacz et al. 2011). Researchers also found that family–friendly policies in the workplace were an important workplace resource for working mothers (Wu et al. 2013). Employees maintained a healthy work–family balance when they received organizational support in a supportive workplace culture created by family–friendly policies (Munn 2013). In addition, Crowley (2013) used a sample of 25 in-depth interviews from African American working mothers and found that these mothers faced high levels of work stress that decreased their work–family balance. Clearly, these contextual variables alter, or moderate, the experience of work–family balance and related processes.

### **Theoretical Framework**

The current study is grounded in the Process–Person–Context–Time (PPCT) model developed by Bronfenbrenner (1999). According to bioecological theory, proximal processes are the engine of human development and occur through progressively more complex reciprocal interactions between individuals, objects, and symbols in their immediate environments. In order for these processes to be influential and effective, the reciprocal interactions should continue regularly and for extended periods of time (Bronfenbrenner and Morris 1998). Although proximal processes are the engine of development, they function within other contextual factors, that can either limit or stimulate the functioning of proximal processes.

Bioecological theory states that proximal processes are influenced by context, individuals' characteristics, and the nature of relevant outcomes (Bronfenbrenner and Evans 2000). The context includes both immediate and remote environments (Bronfenbrenner and Ceci 1994). The characteristics of developing persons refer to resource characteristics, demand characteristics, and force characteristics (Bronfenbrenner 1995a). Resource characteristics include individuals' emotional, mental, material, and social resources: intelligence, disposition education needed to succeed in society, past experiences, and access to housing, food, and caring parents (Bronfenbrenner 1995b). Demand characteristics are individuals' appearance, such as age, gender, and race (Bronfenbrenner 2005a). Force characteristics include individuals' motivations, consistency, and

persistence in pursuing and achieving a goal (Bronfenbrenner 2005b). Resource characteristics can stimulate the functioning of proximal processes that may foster individuals' development, while demand characteristics can limit the functioning of proximal processes and restrain development (Bronfenbrenner and Morris 2006). The environment in which proximal processes take place refers to ecological systems, such as microsystem, mesosystem, exosystem, macrosystem, and chronosystem. The microsystem is the immediate environment, which is the most proximal to individuals, such as family and workplace. The mesosystem connects two or more microsystems, such as working mothers' work–family experiences. The exosystem does not directly affect individuals but it can indirectly shape their experiences. For instance, having a bad day at work can negatively affect working mothers' interactions with their children at home. The macrosystem refers to culture, values, and ideologies. For instance, culture shapes our interactions with others and the meaning we infer based on those interactions. The chronosystem refers to social, historical, and age-specific changes.

## The Present Study

Grounded in bioecological theory, the current study considered the roles of relationship quality and a nonstandard work schedule as driving forces of proximal processes that impact work–family balance via positive family-to-work and positive work-to-family spillover over time, and that vary by education (Hypothesized Model 1), family friendly policies (Hypothesized Model 2), and race (Hypothesized Model 3). First, relationship quality represents a reciprocal interaction between working mothers and their spouses/partners in a family environment (Bronfenbrenner 1995a) and continues on a regular basis over an extended period (Bronfenbrenner and Evans 2000). In addition, a nonstandard work schedule provides a certain type of environment in which working mothers have reciprocal interactions with persons (e.g., supervisors and coworkers), objects (e.g., equipment), and symbols (e.g., organizational values and cultural symbols). For proximal processes to function well, such reciprocal interactions at home and work should support the functioning of proximal processes over time; otherwise, individuals' development remains constant or regresses (Bronfenbrenner 1995b).

As reviewed earlier, work and family are interrelated domains in the present day. Therefore, a high relationship quality between a mother and spouse/partner and a mother's nonstandard working schedule support the positive functioning of proximal processes and may partially create positive family-to-work spillover. In addition, a high quality relationship and the flexibility to work during a nonstandard time enable a working mother and spouse/partner

to better understand and adjust to each other's work and career demands, which results in increasing positive work-to-family spillover. Positive spillover, both family-to-work and work-to-family, would help couples maintain work–family balance.

Next, to understand how these processes may vary, we also tested two individual characteristics and one contextual factor as moderating variables. The first individual characteristic includes one resource characteristic (i.e., educational level of working mothers). A higher level of education would promote a positive relationship between the proximal processes (i.e., relationship quality and nonstandard work schedule) and work–family balance as a desirable family outcome. The other individual characteristic includes a demand characteristic (i.e., race of working mothers). Non-White working mothers would experience a positive relationship to a lesser degree between the proximal processes and work–family balance. Finally, family–friendly workplace policies provide a context which is immediate and external to working mothers (Bronfenbrenner and Morris 2006). It is expected that workplaces with family–friendly policies available for their employees may increase the positive effects of relationship quality and decrease the negative effects of a nonstandard work schedule on positive work-to-family spillover, family-to-work spillover, and work–family balance.

## Method

### Sample

The current study used secondary data from an existing longitudinal study called “Working Mothers Physical Activity and Eating Habits,” which was conducted in 2013 (Grzywacz et al. 2014). The purpose of the original study was to examine the role of schedule control in influencing women's physical activity and how these relationships change based on racial and educational differences. The sample for the current study consisted of 302 full-time working women, who had at least one child between four and nine years of age and had an average of 1.77 children ( $SD=0.68$ ). In addition, 62.6% of women had a combination of preschool-aged children and school-aged children. The average age of women at the time of intake was 35 years ( $SD=5.9$ ) and 70% were married or cohabiting. In the sample, 34.4% were African American and 65.6% were White. Women worked 42 h per week on average ( $SD=7.30$ ). Nearly 25% of women reported that they were doing a job that required a nonstandard schedule. The partner of each woman, if present, worked an average of 44 h per week ( $SD=9.90$ ). Household earnings ranged from \$15,000 to



\$150,000. Additional descriptive statistics of measured variables appear in Table 1.

In this sample, women who earned an associate's degree or higher were considered to have a high level of education. Women who earned a trade degree or lower (trade degree refers to either secondary or post-secondary education, which explicitly provides students with vocational or technical education or skills required for a particular job) were considered to have a low level of education. These two categories were included in the original dataset because the sample was stratified based on education and race, and the original study focused on educated working mothers (Grzywacz et al. 2014). The current sample included 42.4% women with a trade degree or lower and 57.6% with an associate's degree or higher. In an examination of percent distribution of race by work schedule, 30.7% of African American women and 69.3% of White women had a standard work schedule. Similarly, 45.9% of African American women and 54.1% of White women had a nonstandard work schedule. Examining education by work schedule, we found that 40.8% of the women with a trade degree or lower and 59.2% of the women who had an associate's degree or higher had a standard work schedule. Likewise, 47.3% of the women who had a trade degree or lower and 52.7% of women who had an associate's degree or higher had a nonstandard work schedule.

## Procedure

The current sample was derived from a multi-stage stratified random sampling technique (Grzywacz et al. 2014). A list of potential participants was obtained from administrative data systems maintained by a Midwestern not-for-profit and cooperative agency that provides services regarding healthcare, medical education and research, and healthcare administration and financing. After obtaining a complete list of potential participants based on the inclusion and exclusion criteria, a sample frame was developed (Grzywacz et al. 2014). Inclusion criteria consisted of the following: women who were at least 18 years old; identified as African American only or White only; currently worked a minimum of 35 h per week; and had at least one child between 4 and 9 years of age in their households. Specific criteria were used to exclude certain participants based on factors that could confound the results: women who were pregnant at the time of the baseline survey interview or had a baby in the last 12 months; did not intend to work for the same employer over the next 12 months; had a member in their household who had a developmental issue or devastating medical condition; insufficient English fluency or understanding to complete the questions related to the participants' screening; and/or were not born in the U.S. A simple random sampling was used to select participants from each stratified group.

The final sample at time 1 consisted of 302 respondents. By time 4, 93.4% ( $n = 282$ ) of the original sample were retained. Data collection for the original study was carried out at four equal intervals over the course of 12 months (Grzywacz et al. 2014). The data captured a sufficient time period to identify change in the variables of interest.

## Measures

### Work–Family Balance

The original measure (Boyar et al. 2006) was modified by Grzywacz et al. (2014) and included three items. This scale was measured using Likert response options that ranged from 1 (*never*) to 5 (*always*); a higher value indicated a greater level of work–family balance (sample item: “Received the impression from important people in your life that you were doing a good job of balancing work and family”). Two additional categories were available: “I don't know” and “refused.” The values against these two additional categories were assigned as system missing values, which were imputed by using multiple imputation technique. Cronbach's alpha was 0.58 for time one, 0.63 for time two, 0.66 for time three, and 0.63 for time four. Scores for work–family balance were taken from time 4, whereas those from times 1, 2, and 3 were controlled for in all three models to account for autocorrelation and better specification.

### Relationship Quality

Relationship quality with spouse/partner was measured using a single item: “What number best describes the degree of happiness in your relationship with your spouse or partner?” This variable was measured at time 1. The responses ranged from very unhappy, “1,” and perfectly happy, “7.” The variable relationship quality was one of the exogenous variables included in the analysis.

### Nonstandard Work Schedule

Nonstandard work schedule was measured with a single item at time 1: “What best describes your usual work schedule on your main job?” This variable had five Likert response options: regular daytime (1), regular evening (2), regular night (3), rotating (4), and varies (5). A higher score indicated greater nonstandard work schedule and a lower score represented less nonstandard work schedule. This variable was recoded into a dichotomous variable consisting of two categories: “No” and “Yes.”

### Work-to-Family Spillover

This construct was measured at all four times and consisted of four items (sample item: “Things you do at work help you deal with issues at home”). Each item had five Likert response options that ranged from 1 (*never*) to 5 (*always*). Overall work-to-family spillover was calculated by computing the average of these four items. Higher values indicated a greater level of work-to-family spillover, and lower values indicated a smaller level of work-to-family spillover. This scale was established and tested in previous studies (Grzywacz and Marks 2000). Cronbach’s alpha was 0.76 for time 1, 0.77 for time 2, 0.81 for time 3, and 0.81 for time 4. For the current study, work-to-family spillover and family-to-work spillover (presented below) were represented using the average scores of time 2 and time 3 in order to utilize the maximum information available occurring after the main predictor and before the measurement of the outcome (Schumacker and Lomax 2010).

### Family-to-Work Spillover

This construct was measured using four items (sample item: “Things you do at home help you deal with issues at work”). A new variable of family-to-work spillover was created by computing the average of these four items. Higher values indicated a greater level of family-to-work spillover, and lower values indicated a smaller level of family-to-work spillover. Each item had five Likert response options that ranged from 1 (*never*) to 5 (*always*). This scale was established and tested in previous studies (Grzywacz and Marks 2000). Cronbach’s alpha was 0.73 for time 1, 0.74 for time 2, 0.79 for time 3, and 0.83 for time 4.

### Education

To obtain information about women’s education, the following question was asked: “What is the highest level of education you have completed?” Women who earned an associate’s degree or higher were considered to have a high level of education (coded as “1”) and, those who obtained a trade degree or lower were considered to have a low level of education (coded as “0”). The variable women’s educational level was measured at time 1 and included in the analysis as a moderator or grouping variable.

### Family-Friendly Workplace Policies

This construct was measured at the time of intake and consisted of thirteen items (sample item: “Is there paid time-off available in your workplace?”). A new construct was created by computing the average of all thirteen items (alpha = 0.80). This variable was further dichotomized such

that 0 represented no available family-friendly workplace policies and 1 represented available family-friendly workplace policies for the purpose of multivariate analysis.

### Race

The time 1 question about race included in the questionnaire was: “Do you consider yourself to be African American or White?” The current study included only White (=1) and African American (=0) women.

Bivariate analysis correlation analysis was carried out to examine the associations between the independent variables and the dependent variable. Appropriate correlations were found between the predictors and the outcome variables. The correlations between the independent variables also helped the researchers to assess the issues of multicollinearity. There were no issues of multicollinearity found between the predictors. Therefore, all variables, which were guided by the theory, were included in path analyses. The results of the correlation analysis are reported in Table 2.

## Results

The three hypothesized models were tested using a path analytic technique in AMOS (Byrne 2010). We tested both the direct effects (Lee et al. 2014) of a nonstandard work schedule and relationship quality on work-family balance as well as the indirect effects through work-to-family spillover and family-to-work spillover (Schumacker and Lomax 2010). We conducted three separate multi-group analyses with different moderators: model 1 included education, model 2 included family-friendly workplace policies, and model 3 included race. All other variables were consistent across models, including age and marital status measured at time one, which were used as control variables; an exception was race which was included as a control variable in the first two models and a moderating variable in the third model. Surprisingly, both number and age of children were not related to the study variables and, accordingly, were dropped as potential control variables.

For each analysis, the first model estimated was the unconstrained model using the maximum likelihood estimation method, as suggested for multi-group analyses (Byrne 2010; Lee et al. 2014), with all parameters tested (Schumacker and Lomax 2010). After testing the initial model, the non-significant paths between exogenous and control variables were trimmed to achieve parsimony and increase sample power (Byrne 2010). Others were retained to maintain theoretical consistency. The values of fit indices improved after trimming the non-significant paths (Byrne 2010; Schumacker and Lomax 2010). The endogenous variables (work-to-family spillover and family-to-work spillover)

were correlated in the model, consistent with theory (Bronfenbrenner, 2005a) and existing literature (Curran et al. 2015; Dawn et al. 2011; Grice et al. 2011), and thus were controlled to identify their individual contributions to the models (Schumacker and Lomax 2010).

To test the mediating role of family-to-work spillover, a Sobel test was used (Baron and Kenny 1986; Goodman 1960; Sobel 1982). The values of beta and standard error of path a (i.e., from relationship quality to family-to-work spillover) and path b (i.e., from family-to-work spillover to work–family balance) were entered into a Sobel calculator. To test moderation based on the grouping variables (i.e., education level, family–friendly policies, and race), a chi-square difference test developed by Kenny (2013) was used for both the overall moderation test. Comparative model testing was conducted to assess the chi-square change between the constrained and unconstrained models (Kenny 2013). This helped to assess if the change in the chi-square was appropriate given the reduction in the degrees of freedom and significance level.

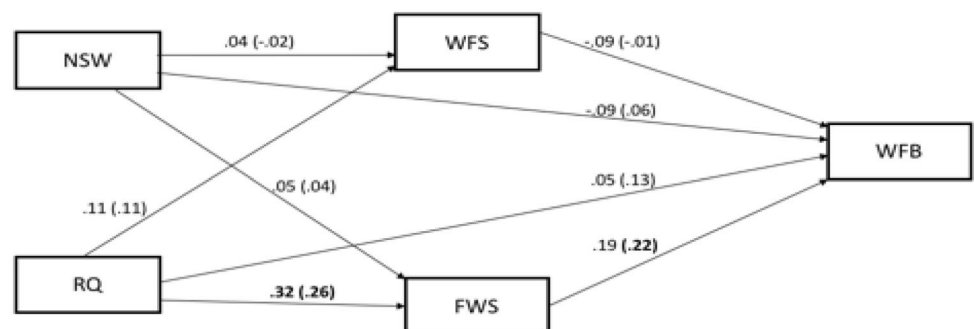
### Model 1

The first multi-group analysis (see Table 3; Fig. 1) was estimated based on education level. Group 1 consisted of working mothers who had trade degrees or lower and group 2 contained those working mothers who had associate’s degrees or higher. The values of fit indices indicated that the data fit the theoretical model (GFI=0.96; CFI=0.94; RMSEA=0.05; AIC=136.71; Byrne 2010; Lee et al. 2014). In group 1 (i.e., lower education), there was a significant positive relationship between relationship quality and positive family-to-work spillover ( $\beta=0.32, p<0.001$ ), accounting for 12% of the variance. This was the only significant relationship in group 1 of this model. In group 2 (i.e., higher education), there was a significant positive relationship between relationship quality and positive family-to-work spillover ( $\beta=0.26, p<0.001$ ). There was also a significant positive relationship between the positive family-to-work spillover and work–family balance ( $\beta=0.22, p=0.02$ ). The two paths from relationship quality to positive family-to-work spillover and from positive family-to-work spillover to work–family balance were significant, which showed that

**Table 1** Descriptive statistics of measured variables in the model

Variables	<i>N</i>	<i>M</i>	<i>SD</i>	Skewness	Kurtosis
Work-family balance at time one	302	3.75	0.55	−0.02	0.17
Work-family balance at time two	302	3.76	0.55	−0.33	1.16
Work-family balance at time three	302	3.73	0.58	−0.93	4.24
Work-family balance at time four	302	3.75	0.54	−0.35	0.78
Work-to-family spillover at time one	302	2.80	0.75	−0.03	−0.13
Work-to-family spillover at time two	302	2.81	0.73	−0.02	0.46
Work-to-family-spillover at time three	302	2.82	0.77	−0.22	0.11
Work-to-family spillover at time four	302	2.81	0.80	−0.32	0.04
Family-to-work spillover at time one	302	3.35	0.79	−0.42	0.12
Family-to-work spillover at time two	302	3.35	0.74	−0.44	0.79
Family-to-work spillover at time three	302	3.33	0.75	−0.45	0.82
Family-to-work spillover at time four	302	3.25	0.76	−0.43	0.36
Relationship quality	302	5.82	0.90	−1.19	2.69
Workplace policies	302	7.73	2.83	−0.52	0.28
Age	302	35.77	5.90	0.10	−0.78

**Fig. 1** Moderated-mediating model based on education level. Significant paths are bolded. Coefficients inside parenthesis are for those with an associate degree or higher. Coefficients outside parenthesis are for those with a trade degree or lower



**Table 2** Correlations of measured variables in the model

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. WFB_T1	-	0.45**	0.31**	0.50**	0.16**	0.19**	0.05	0.16**	0.17**	0.16**	0.13*	0.20**	-0.04	0.11	-0.04	-0.07	0.15**	0.24**	0.15**
2. WFB_T2		-	0.54**	0.43**	0.10	0.16**	0.13*	0.12*	0.22**	0.27**	0.27**	0.17**	-0.01	0.12*	-0.08	-0.03	0.22**	-0.15*	-0.12*
3. WFB_T3			-	0.47**	0.03	0.11	0.22**	0.13*	0.22**	0.28**	0.43**	0.15*	0.08	0.13*	-0.03	-0.05	0.19**	-0.11	-0.07
4. WFB_T4				-	0.03	-0.01	0.09	0.18**	0.21**	0.15**	0.24**	0.27**	0.02	0.15*	-0.14	-0.04	0.26**	0.21***	-0.10
5. WFS_T1					-	0.54**	0.56**	0.56**	0.33**	0.25**	0.20**	0.25**	-0.03	0.01	0.05	-0.02	0.03	0.12*	0.10
6. WFS_T2						-	0.67**	0.63**	0.25**	0.41**	0.34**	0.29**	-0.02	0.03	0.16**	0.06	0.07	0.15*	0.04
7. WFS_T3							-	0.62**	0.23**	0.32**	0.45**	0.29**	0.05	0.02	0.18**	0.06	0.08	0.16**	0.07
8. WFS_T4								-	0.34**	0.31**	0.34**	0.50**	0.01	-0.01	0.14*	0.01	0.06	0.10	0.11
9. FWS_T1									-	0.58**	0.55**	0.54**	0.01	0.23**	-0.06	0.14*	0.18**	-0.07	-0.03
10. FWS_T2										-	0.59**	0.60**	0.05	0.29**	0.06	-0.04	-0.11*	-0.05	-0.01
11. FWS_T3											-	0.52**	0.04	0.22**	0.04	-0.05	0.16***	-0.11	-0.07
12. FWS_T4												-	0.09	0.26**	0.06	-0.07	-0.14*	-0.16*	-0.11
13. NSW													-	-0.01	-0.06	0.25***	-0.08	-0.14*	-0.10
14. RQ														-	0.04	-0.08	-0.02	0.09	-0.01
15. EDU															-	0.09	0.34**	0.01	0.23**
16. FFP																-	0.14*	0.06	0.01
17. AGE																	-	0.21**	0.32**
18. RACE																		-	0.38**
19. MS																			-

WFB work-family balance, WFS family-to-work spillover, FWS family-to-work spillover, NSW nonstandard work schedule, RQ relationship quality, EDU education level, FFP family-friendly policies, MS marital status

\* $p < 0.05$ , \*\* $p < 0.001$



positive family-to-work spillover might mediate the relationship between relationship quality and work–family balance (Kenny 2008). Relationship quality explained 8.7% variance for family-to-work spillover and 13% variance for work–family balance through family-to-work spillover for working mothers who have associate degrees or higher. According to the results of Sobel’s test, no significant mediation effect of family-to-work spillover was found between relationship quality and work–family balance ( $t = 1.16, p = 0.25$ ).

Next, a fully constrained model was estimated that constrained all paths to be equal across the two groups (Schumacker and Lomax 2010). After running these models, the values of chi-square and degrees of freedom from the unconstrained  $\chi^2(28, 302) = 48.71, p = 0.01$  and constrained  $\chi^2(38, 302) = 54.78, p = 0.04$  models were taken and entered into a chi-square difference test developed by Kenny (2013). The results of the chi-square difference test indicated that the two education groups of working mothers were not significantly different,  $\chi^2(10, 302) = 6.08, p = 0.81$ . That is, these work–family processes appear to work similarly across groups, meaning education did not moderate the overall model.

### Model 2

The second multi-group analysis was based on the availability of family–friendly policies in the workplace (see Table 4; Fig. 2). The values of fit indices were appropriate (GFI = 0.96; CFI = 0.93; RMSEA = 0.05; AIC = 144.15), and suggest the data fit the theoretical model. For the first group (i.e., those without family–friendly policies), there was a significant positive relationship between relationship quality and positive family-to-work spillover ( $\beta = 0.27, p < 0.001$ ). No other paths were significant. Relationship quality explained 14% variance for family-to-work spillover and 15% variance for work–family balance through family-to-work spillover for the first group. In the second group (those with family–friendly policies), there was a significant positive relationship between relationship quality and work-to-family spillover ( $\beta = 0.15, p = 0.04$ ). Relationship quality had a significant positive relationship with family-to-work

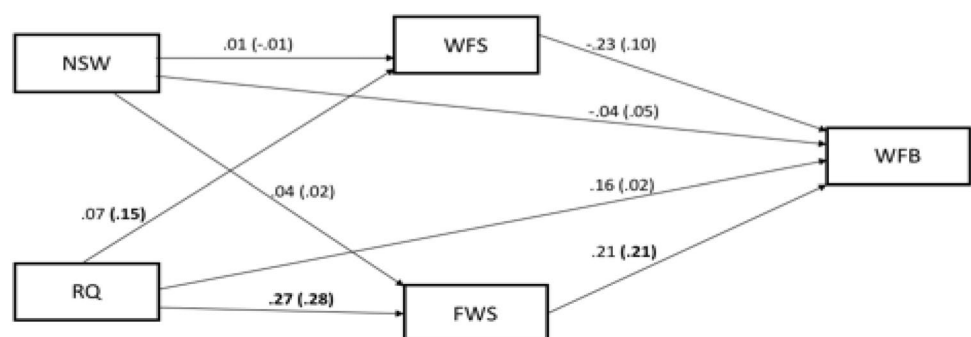
spillover ( $\beta = 0.28, p < 0.001$ ). There also was a significant positive relationship between the positive family-to-work spillover and work–family balance ( $\beta = 0.21, p = 0.04$ ). The two paths from relationship quality to family-to-work spillover and from family-to-work spillover to work–family balance were significant, which suggests a possible mediation effect of positive family-to-work spillover. According to Sobel’s test, a significant mediation effect of family-to-work spillover was found between relationship quality and work–family balance ( $t = 2.29, p = 0.02$ ). Relationship quality accounted for 8% and 2.3% variances for family-to-work spillover and work-to-family spillover, and it explained 15% variance for work–family balance through family-to-work spillover for the second group.

To test the moderation effects based on family–friendly policies (i.e., family–friendly policies are not available versus family–friendly policies are available), the chi-square values of the unconstrained  $\chi^2(28, 302) = 56.15, p = 0.01$  and constrained  $\chi^2(38, 302) = 78.10, p < 0.001$  models were estimated (Kenny 2013). The results indicated that the two groups of working mothers were significantly different from each other,  $\chi^2(10, 302) = 21.95, p = 0.02$ ; thus, family–friendly workplace policies was a significant moderator of the model.

### Model 3

The third multi-group analysis was based on race (see Table 5; Fig. 3). Group 1 represented African American mothers and Group 2 White mothers. The values of fit indices were appropriate (GFI = 0.98; CFI = 0.98; RMSEA = 0.03; AIC = 91.82), meaning the data fit the model. In group 1, there was a significant positive relationship between relationship quality and positive family-to-work spillover with all other paths non-significant ( $\beta = 0.27, p = 0.01$ ). Relationship quality accounted for 10% variance for family-to-work spillover for the first group. In group 2, there was a significant positive relationship between relationship quality and family-to-work spillover ( $\beta = 0.32, p < 0.001$ ). There also was a significant positive relationship between family-to-work spillover and work–family

**Fig. 2** Moderated-mediating model based on workplace family–friendly policies. Significant paths are bolded. Coefficients inside parenthesis are for those who have family friendly policies available in the workplace. Coefficients outside parenthesis are for those who do not have family friendly policies available in the workplace



balance ( $\beta = 0.24, p = 0.02$ ). The two paths from relationship quality to family-to-work spillover and from family-to-work spillover to work-family balance were significant. According to Sobel’s test, a significant mediation effect of family-to-work spillover was found between relationship quality and work-family balance among White mothers only ( $t = 3.06, p = 0.002$ ). Relationship quality explained 13% of the variance for family-to-work spillover and 12% variance

for work-family balance through family-to-work spillover for the second group.

For the test of moderation, the values of unconstrained ( $\chi^2(18, 302) = 15.82, p = 0.61$ ) and constrained ( $\chi^2(28, 302) = 22.52, p = 0.76$ ) models were estimated (Kenny 2013). The results indicated that the groups of working mothers were not significantly different by race  $\chi^2(10, 302) = 6.7, p = 0.75$  (see Tables 4, 5).

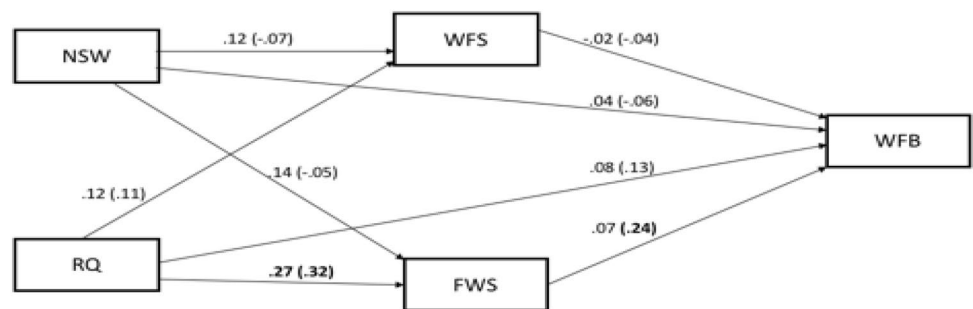
**Table 3** Model 1 path coefficients by education level

Variables	Trade degree or lower			Associate degree or higher		
	<i>B</i>	<i>SE</i>	$\beta$	<i>B</i>	<i>SE</i>	$\beta$
WFS_T2T3 <- Nonstandard work	0.08	0.20	0.04	-0.04	0.15	-0.02
WFS_T2T3 <- Relationship quality	0.13	0.11	0.11	0.10	0.07	0.11
FWS_T2T3 <- Relationship quality	0.53	0.14	0.32**	0.34	0.10	0.26**
FWS_T2T3 <- Nonstandard work	0.16	0.27	0.05	0.11	0.21	0.04
FWS_T2T3 <- Age	-0.03	0.01	-0.12*	-0.03	0.01	-0.14*
WFB_T4 <- Relationship quality	0.03	0.06	0.05	0.07	0.04	0.13
WFB_T4 <- Nonstandard work	-0.10	0.10	-0.09	0.07	0.09	0.06
WFB_T4 <- WFS_T2T3	-0.05	0.07	-0.09	0.00	0.06	-0.01
WFB_T4 <- FWS_T2T3	0.07	0.06	0.19	0.09	0.04	0.22*
WFB_T4 <- Age	-0.02	0.01	-0.18*	-0.02	0.01	-0.2**

WFS work-to-family spillover, FWS family-to-work spillover, WFB work-family balance

\* $p < 0.05$ , \*\* $p < 0.001$

**Fig. 3** Moderated-mediating model based on race. Significant paths are in bold. Coefficients inside parenthesis are for White working mothers. Coefficients outside parenthesis are for African American working mothers



**Table 4** Model 2 path coefficients by family-friendly workplace policies

Variables	FFP not available			FFP available		
	<i>B</i>	<i>SE</i>	$\beta$	<i>B</i>	<i>SE</i>	$\beta$
WFS_T2T3 <- Nonstandard work	0.01	0.18	0.01	-0.03	0.18	-0.01
WFS_T2T3 <- Relationship quality	0.08	0.10	0.07	0.15	0.08	0.15*
FWS_T2T3 <- Relationship quality	0.42	0.13	0.27**	0.40	0.11	0.28**
FWS_T2T3 <- Nonstandard work	0.12	0.24	0.04	0.06	0.24	0.02
FWS_T2T3 <- Age	-0.06	0.01	0.26**	-0.01	0.01	-0.03
WFB_T4 <- Relationship quality	0.10	0.05	0.16	0.01	0.04	0.02
WFB_T4 <- Nonstandard work	-0.05	0.10	-0.04	0.06	0.10	0.05
WFB_T4 <- WFS_T2T3	-0.13	0.07	-0.23	0.06	0.06	0.10
WFB_T4 <- FWS_T2T3	0.08	0.05	0.21	0.09	0.04	0.21*
WFB_T4 <- Age	-0.02	0.01	-0.15	-0.02	0.01	-0.24**

WFS work-to-family spillover, FWS family-to-work spillover, WFB work-family balance

\* $p < 0.05$ , \*\* $p < 0.001$

**Table 5** Model 3 path coefficients by race

Variables			African American			White		
			<i>B</i>	<i>SE</i>	$\beta$	<i>B</i>	<i>SE</i>	$\beta$
WFS_T2T3	<-	Nonstandard work	0.25	0.21	0.12	-0.15	0.16	-0.07
WFS_T2T3	<-	Relationship quality	0.14	0.12	0.12	0.11	0.07	0.11
FWS_T2T3	<-	Relationship quality	0.48	0.17	0.27**	0.41	0.09	0.32**
FWS_T2T3	<-	Nonstandard work	0.44	0.30	0.14	-0.15	0.20	-0.05
FWS_T2T3	<-	Age	-0.02	0.02	-0.08	-0.03	0.01	-0.14**
WFB_T4	<-	Relationship quality	0.06	0.07	0.08	0.07	0.04	0.13
WFB_T4	<-	Nonstandard work	0.05	0.12	0.04	-0.08	0.08	-0.06
WFB_T4	<-	WFS_T2T3	-0.01	0.08	-0.02	-0.02	0.06	-0.04
WFB_T4	<-	FWS_T2T3	0.03	0.05	0.07	0.10	0.04	0.24*
WFB_T4	<-	Age	-0.02	0.01	-0.25*	-0.01	0.01	-0.15*

WFS work-to-family spillover, FWS family-to-work spillover, WFB work-family balance

\* $p < 0.05$ , \*\*  $p < 0.001$

## Discussion

The overall findings indicate that only relationship quality is important for working mothers across the tested models to create positive family-to-work spillover. Additionally, family-friendly policies is the only statistically significant moderator. There are no statistically significant indirect effects of any spillover on the link between relationship quality and work-family balance, except when family-friendly policies are tested as a moderator. The current findings require researchers to pay closer attention to the following discussion.

First, it is noteworthy that the current study demonstrates the theoretical applicability of the PPCT model in work-family research by explaining ongoing adult development as well as family development. In the current study, relationship quality is operationalized as a measure of proximal processes, which are central to individuals' development and should impact the outcome (Bronfenbrenner 1994; Bronfenbrenner and Evans 2000; Bronfenbrenner and Morris 2006). The extant studies which are grounded in the PPCT model have argued that progressively more complex reciprocal interactions with persons and objects in the immediate environment, which continue on a regular basis and for extended periods of time, stimulate the functioning of proximal processes resulting in individuals' healthy development (Benson and Buehler 2012; Farrant and Zubrick 2012).

Utilizing a sample of working mothers with young children, the findings of this study illustrate how establishing a quality couple relationship at home can facilitate positive work experiences among working mothers (i.e., family-to-work spillover). Providing family-friendly policies at work can accelerate this effect to help working mothers maintain work-family balance. That is, positive experiences of work-family balance can be better achieved when working mothers receive support both at home and at work

simultaneously and systematically. Current research shows that spousal/partner support has been an important factor that plays an essential role in decreasing mothers' parenting stress (Gillis and Roskam 2019). Maintaining a healthier relationship with spouse/partner would help a couple work together while parenting young children, resulting in helping working mothers maintain work-family balance by lowering parenting stress and increasing more work-related competence (i.e., positive family-to-work spillover). Working at an institution that provides family-friendly policies would further help working mothers to generate this positive family-to-work spillover by providing institutional means to support their positive parenting experiences, eventually promoting their ability to establish work-family balance. These findings reemphasize the complex proximal processes at various contextual levels while explaining working mothers' lives.

Next, in model 2, for those working mothers without family-friendly policies available, only the link between relationship quality and positive family-to-work spillover is significant. In contrast, for those working mothers who have family-friendly policies available in the workplace, family-to-work spillover mediates the relationship between relationship quality and work-family balance. These results show that the availability of family-friendly policies promote the mediating role of family-to-work spillover between relationship quality and work-family balance. In other words, family-friendly policies help working mothers to realize positive effects of family-to-work spillover and create work-family balance. Previous research finds that the availability of family-friendly workplace policies creates a positive perception among employees about their workplace (Lawson et al. 2013; Wu et al. 2013). Perhaps, even for employees who do not avail themselves of these policies, the presence of such policies can promote a realistic expectation toward maintaining work-family balance. For example, another study shows that the availability of

supportive childcare policies decreases women's negative family-to-work spillover, particularly for mothers who have young children (Ruppanner and Pixley 2012). The thought is that the presence of young children creates additional strain for working women and, when these women have a childcare facility, it helps them manage their work family responsibilities and decreases negative spillover from the family to the work domain (Ruppanner and Pixley 2012). The findings of the current study emphasize the importance of providing family-friendly policies at work as an effort to promote working mothers' work-family balance, resulting in positive outcomes of individual mothers, their families, and productivity of workforce.

Alternatively, although education level and race are not statistically significant moderators and no significant indirect effects are found in the tested models, it is noteworthy that some paths in those models differ across groups in meaningful ways (Kenny 2008, 2013; Schumacker and Lomax 2010). More specifically, these groups are significantly different based on the path from family-to-work spillover to work-family balance. In particular, paths from quality relationship to positive family-to-work spillover and to work-family balance are consistently significant only for the more privileged group (i.e., high education and Whites) across the tested models. For those less privileged working mothers (lower education and African Americans), there are consistent disconnections between family-to-family spillover and work-family balance.

Despite the absence of moderating effects by education and race, these results imply that those who are educationally and racially more privileged working mothers may be better equipped to transform positive family-work spillover into work-family balance because they are more likely to have access to additional resources and support. For example, more privileged working mothers are more likely to elicit instrumental support for homecare and extra hour child care. In addition, more privileged working mothers are more likely to be able to work at institutions that provide family-friendly policies, such as flexible work hours and remote working. It is also likely that family-friendly policies, such as schedule flexibility, childcare, and insurance coverage, are more widely available in larger scale employers who may be more likely to hire those who have higher educational and socioeconomic status and belong to particular racial groups who are already advantaged and privileged in society. Several studies have found that African American mothers are more likely to work in a non-standard work schedule (Grzywacz et al. 2010; Odom et al. 2013; Raza et al. 2018), to have lower socioeconomic status (Crowley 2013; Raza et al. 2018), and less likely to work in workplaces that consider the importance of maintaining a healthy work-family balance for their employees and carry out specific programs or interventions to help employees

balance their work-family life (Kelly et al. 2014), compared to their counterpart White mothers. This evidence implies that in order to understand the true nature of the relationships between couple relationships, family-to-work spillover, and work-family balance, it is important to recognize that disparities exist in the workplace and action is needed to bring appropriate applications of the PPCT model to address these issues in work-family research. Despite the lack of significant mediation and moderation effects in the current study, additional research is needed to further explore these findings.

### Limitations

There are some limitations of the current study. First, because the current study used secondary data, there were no direct assessments of proximal processes available for use. Therefore, two variables (relationship quality and non-standard work schedule) were used as proxies to operationalize proximal processes, which might not have resonated with the true definition and operationalization of proximal processes (Bernal et al. 2016). Second, the current study was based on self-report data, which can lead to a response bias as well as other biased estimates (Remler and Van Ryzin 2011). Third, the element of self-selection involved limited the researchers' ability to examine full causation even though longitudinal data was used in the current study. Fourth, the reliability of the modified version of the work-family balance scale was marginally less than 0.7. This could result in increased measurement error and influence the precision of estimates. Thus, the findings of the study should be viewed with some level of caution. Because the current modified scale consisted of only three items intended to capture information about both work and family domains, a more comprehensive scale is needed to appropriately measure the theoretical constructs of work-family balance. It may be that a new modification of the original scale should be considered and tested. Importantly, the scales used in this study would benefit from explicit testing to better ensure the validity of use with diverse populations. Hence, future research can focus on developing a more comprehensive scale and testing it on diverse groups of the population.

### Implications for Future Research and Practice

The current study explored the associations among couple relationships, positive spillovers, and work-family balance using the PPCT model. The current study findings have contributed to an expansion of the application of the PPCT model to work-family research and further emphasis on the importance of family-friendly policies and the

possibility of prevalent inequality in the mechanism to maintain work–family balance. To better address these issues and have a better understanding of the complex dynamics in work–family research, further studies are needed. First, in the current study, key PPCT variables, such as work-to-family spillover and non-standard work schedule, did not yield statistically significant results. In future studies, it is important to reexamine the roles of these variable in a PPCT model of work-family balance. For example, previous studies have found that the constructs of work-to-family spillover and family-to-work spillover are associated, and therefore one affects the other (Dawn et al. 2011; Lee et al. 2014). To further understand proximal processes of constructing work-to-family and family-to-work spillovers, it is necessary to test correlational effects of these two factors in a work-family balance model, rather than treating them as mutually independent variables.

The PPCT model suggests that if the proximal processes do not reflect a positive environment, their functioning may be limited or move in a negative direction (Bronfenbrenner and Morris 1998, 2006). The lack of significant findings suggests a nonstandard work schedule may not provide an adequate source to promote the functioning of proximal processes and may function differently in work–family research. It may be part of the demand characteristics or family friendly policies. Clarifying the role of a nonstandard work schedule in the model is recommended. In addition, to promote positive work-to-family spillover and positive family–work spillover, it may be important to explore the roles of support from a supervisor or coworkers as part of proximal processes at work (Carlson et al. 2013; Dawn et al. 2011; Grice et al. 2011) in addition to spousal support through couple relationships at home. On the other hand, the relation between work–family balance and quality of couple relationship may be bidirectional. That is, couples can maintain quality relationships when they are able to manage work–family balance, and vice versa. Therefore, it may be important to test mutual influences of work–family balance and couple relationship in order to clearly demonstrate proximal processes over time.

Finally, despite the non-statistically significant findings, the current study findings suggest the variations in a mechanism of producing work–family balance across different groups. It is imperative to understand these variations to support working mothers from diverse groups to meet their needs in work–family balance. For example, for White mothers, positive family-to-work spillover positively influenced work–family balance, while for African American mothers, it was not significant. Therefore, additional research is needed to gain a more contextualized and in-depth understanding of these findings. Future research on this topic may help researchers to discover what unique and universal

factors can help working mothers from different racial and ethnic groups to improve or maintain work–family balance.

In practice, the role of relationship quality was a significant factor across models in that it produced increases in positive family-to-work spillover and work–family balance. In addition, family friendly policies moderated the mediating effects of these variables. Therefore, when employers offer family–friendly policies including access to quality childcare, insurance coverage, and schedule flexibility in the workplace, these policies appear to promote the health and wellbeing of employees and have further potential to enhance productivity. Toward that goal, systematic efforts to investigate which family friendly policies would be most beneficial to working mothers in each institution are needed. As discussed earlier, working mothers and their families present diverse needs, which requires comprehensive, need based approaches to support them to establish healthy work–family balance in their lives.

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