



Published in final edited form as:

Community Work Fam. 2019 ; 22(4): 391–411. doi:10.1080/13668803.2019.1616531.

Crossover of Resources and Well-Being within Employee-Partner Dyads: Through Increased Schedule Control

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Abstract

This study examined whether one partner's additional resources obtained from a workplace intervention influence the other partner's perception of having those resources at home (*crossover of resources*). We also examined whether one partner's decreased stress by increased work resources crosses over to the other partner's stress levels (*crossover of well-being*). Longitudinal data came from IT employees and their married/cohabiting partners in midlife ($N=327$). A randomized workplace intervention significantly increased employee-reported schedule control at the 6-month follow-up, which, in turn, increased partner-reported employees' work schedule flexibility to handle family responsibilities at the 12-month follow-up. The intervention also decreased partners' perceived stress at the 12-month follow-up through the processes by which increases in schedule control predicted decreases in employees' perceived stress, which further predicted decreased levels of partners' perceived stress. Notably, crossover of resources and well-being were found in couples who lived with children in the household, but not in couples without children. Our findings suggest that benefits of workplace support can permeate into the family domain, by increasing partner-perceived family resources and well-being.

Abstract

Este estudio examinó si los recursos adicionales a un miembro de la pareja obtenidos a través de una intervención en el lugar de trabajo influyen la percepción del otro miembro de tener esos recursos en la casa (*cruce de recursos*). También examinamos si la disminución de estrés en un miembro de la pareja al aumentar los recursos laborales se traslada a los niveles de estrés del otro miembro (*cruce de bienestar*). Los datos longitudinales provinieron de empleados de TI (Tecnología Informática) y sus parejas casadas/convivientes en la mediana edad ($N = 327$). Una intervención aleatoria en el lugar de trabajo aumentó significativamente el control del horario reportado por empleados en el seguimiento de 6 meses, lo que, a su vez, aumentó la flexibilidad

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del horario laboral de los empleados para manejar las responsabilidades familiares, según reportaron las parejas de los empleados en el seguimiento de 12 meses. La intervención también disminuyó el estrés percibido por las parejas de los empleados en el seguimiento de 12 meses, a través de los procesos mediante los cuales los aumentos en el control programado predijeron disminuciones en el estrés percibido de los empleados, lo que también predijo niveles más bajos de estrés percibido de las parejas de los empleados. En particular, el cruce de recursos y bienestar se encontró en parejas que vivían con niños en el hogar, pero no en parejas sin niños. Nuestros hallazgos sugieren que los beneficios de apoyo en el lugar de trabajo pueden penetrar el dominio familiar, al aumentar los recursos familiares y bienestar percibidos por la pareja.

Keywords

crossover; schedule control; workplace intervention; work schedule flexibility for family roles; family time adequacy; perceived stress

Keywords

cruce; control de horarios; intervención laboral; flexibilidad de horarios de trabajo para los roles familiares; Adecuación del tiempo familiar; estrés percibido

The dual trends of long work hours for professional workers and the rise of dual-earner households have led to increased time demands on families (Harvey & Mukhopadhyay, 2007; Jacobs & Gerson, 2004; Lee, McHale, Crouter, Hammer, & Almeida, 2017). Concurrently, there has been a dramatic increase in research on work-family conflict and the resultant strains on families (Kelly et al., 2014; Nomaguchi, 2009; Pedersen, 2014). Recently, research has pointed to schedule control—whether workers have the ability to determine, to some degree, their working hours and where their work is done—as a positive response to these new time demands (Briscoe, 2007; Moen, Kelly, Tranby, & Huang, 2011). Having schedule control may help employees balance the competing time demands between work and family responsibilities, allowing them to engage in more family roles and responsibilities (Hill, Hawkins, Ferris, & Weitzman, 2001; Jacobs & Gerson, 2004; Moen & Yu, 2000). Previous studies have shown that employees' schedule control can be enhanced by a workplace intervention (Kelly et al., 2014; Kelly, Moen, & Tranby, 2011); yet we know little about the effects of employees' increased schedule control on the family.

The Work-Home Resources (W-HR) model suggests the interconnectedness of resources across work and family domains, such that resources obtained from the work domain may also increase resources in the family domain (ten Brummelhuis & Bakker, 2012). Specifically, the W-HR model asserts that contextual resources, such as family-supportive workplace practices, can attenuate work-family conflict by increasing employee resources to handle work-family responsibilities. Changing workplace practices through well-designed interventions may increase employees' resources such as schedule control (Kelly et al., 2014, 2011; Kossek, Hammer, Kelly, & Moen, 2014). Increased schedule control may, in turn, increase temporal resources in the family and enhance the spouse/partners' well-being. Examining whether a workplace intervention can improve overall family resources and well-being is important given the rise of the 24/7 economy, dual-earner households, and time

pressure in most developed countries (Cha, 2010; Jacobs & Gerson, 2004; Presser, 2004). Yet, limited research has examined whether the benefit of a workplace intervention can permeate into the family domain, assessed by spouse/partners' reports of family resources and well-being. Given evidence that suggests the crossover effects of one partner's work hours on the other partner's work hours (Cha, 2010), this study examines whether and how an employee's increased resources from a workplace intervention crossover to the partner's family resources and well-being.

Work-Home Resources and Crossover Between Employees and Partners

This study is grounded in the Work-Home Resources (W-HR) model to test the effects of a workplace intervention on resources in the family domain (ten Brummelhuis & Bakker, 2012). Both work and family have been termed "greedy institutions" (Coser, 1974) and long work hours for one spouse can impact the hours of the other (Cha, 2010). The main tenet of the W-HR model is that resources are interconnected across domains. Specifically, having less work resources (e.g., less schedule control) may lead to having less family resources such as lack of time for family by reducing personal resources including time and energy. Thus, more work resources obtained from increased schedule control can increase personal resources and subsequently lead to increases in family resources. Therefore, the W-HR model guides us to examine how a workplace intervention designed to increase employees' schedule control (i.e., work resources) influences family resources.

Crossover theory further motivates us to examine the effects of a workplace intervention on family resources in the spouse/partner's point of view (Westman, 2001). An employee's work context may "cross over" to the partner, influencing his/her attitudes, empathy, role performances, and well-being (Bakker, Westman, & Emmerik, 2009; Bolger, DeLongis, Kessler, & Wethington, 1989; Westman, 2001). Linking the W-HR model with the crossover theory (Bakker et al., 2009; Bolger et al., 1989; Westman, 2001), one partner's resources obtained from work may influence the other partner's perceived resources for family and well-being. Yet we know little about whether employees' increased schedule control may influence their partner's perceptions of family resources (*crossover of resources*) or the partner's perceived stress (*crossover of well-being*). The current study fills this gap by examining the ramifications of a workplace intervention on the family system as whole – not just on the employees.

Workplace Intervention Effect on Partner Perceptions of Family Resources

Thus far, limited research has examined whether a workplace intervention can increase family resources. Kelly et al. (2011) found that retail employees participating in the Results-Only-Work-Environment (ROWE) intervention, designed to promote flexible work arrangements, significantly increased employees' perceived time adequacy for personal and family activities. However, less is known about whether employees' increased resources from a workplace intervention is shared in the perceptions of the employees' spouses/partners.

Partners' perceptions about employees' increased work schedule flexibility to handle family responsibilities may provide evidence that increases in one family member's schedule control can permeate into the family domain, as the W-HR model suggests (ten Brummelhuis & Bakker, 2012). At a very basic level, an employee who received a workplace intervention may experience increased schedule control; this additional resource may be evident in the partner's reports of the employee's work schedule flexibility for family roles through cognitive empathy that involves understanding another person's situations (Bakker et al., 2009; Duan & Hill, 1996; Gladstein, 1983; Westman & Hamilton, 2004). Furthermore, assessing partners' perceptions about family time adequacy may provide evidence of crossover of resources such that an employee's additional resource (i.e., increased schedule control) can increase the partner's perceived temporal resources for family and role performance. The first aim of this study is to examine the effects of a workplace intervention on partner perceptions of employees' work schedule flexibility for family and whether the effect is mediated by employee-reports of their increased schedule control. We also examine the effect of a workplace intervention on partner perceptions of family time adequacy and whether the effect is mediated by employees' schedule control. These crossover of resources between employees and partners are depicted in Figure 1.

Workplace Intervention Effect on Partner Perceived Stress

Moving beyond testing the link between employee resources and partner perceptions of family resources, we also test whether *partners' well-being* (measured by perceived stress) is affected by employees' increased schedule control and well-being. The W-HR model (ten Brummelhuis & Bakker, 2012) suggests that contextual resources (e.g., workplace support) can increase individual resources, which, in turn, influences home outcomes, including home-related happiness. Yet whether this benefit extends beyond the employee and to the employee's partner is, as of yet, unknown.

Specifically, increased schedule control from a workplace intervention may decrease employees' perceived stress. This within-person process explaining how employees' experiences in the work domain influence their well-being in the family and personal domains is called spillover (Grzywacz & Marks, 2000). Crossover process involves another person, such that increased schedule control from a workplace intervention may decrease the employees' perceived stress (*spillover*), which may, in turn, decrease their partner's perceived stress (*crossover of well-being*).

Studies have found evidence for crossover effects within couples. For example, during military downsizing in Russian army, marital dissatisfaction crossed over from the male officers to their wives (Westman & Hamilton, 2004). Most crossover studies have focused on negative crossover rather than positive, such as crossover of job insecurity (Debus & Unger, 2017) and crossover of work-to-family conflict (Hammer, Allen, & Grigsby, 1997; Pedersen, 2014). A rare example of positive crossover is a study by Demerouti and colleagues (2012). They found that, when employees experienced more social support at work, their partners reported more home resources, including home autonomy, social support, and time to develop strengths. Building on these previous studies, we test positive crossover of well-

being effect, whether one partner's additional work resources predict decreases in his/her perceived stress, which, in turn, predict decreases in the partner's perceived stress (Figure 1).

Potential Moderation by Contextual Factors

Previous research reports that the extent of work-family conflict and time demands differ by gender and household characteristics, which suggests potential moderation by these factors in crossover of work-family resources and well-being within couples. Working women tend to experience more work-family conflict than working men (Jacobs & Gerson, 2004; Maume, Sebastian, & Bardo, 2010); this may be associated with the couples' increased need to pool resources together. Women also tend to exert more influence on their spouse than men. For example, Westman and Etzion (2005) found that wives' social support buffered the association between family stress and work-family conflict for the husbands. Moreover, partner employment status (dual-earner vs. single-earner households) and childcare responsibilities (living with children in the household) may be important factors contributing to how couples experience work-family conflict and maximize their resources and well-being across work and family domains (Winslow, 2005). In a study examining the effect of a workplace intervention on employees' perceived stress, the intervention was more beneficial in decreasing perceived stress for those with child care responsibilities, compared to those without (Kossek et al., 2017). These studies motivate us to explore whether and how crossover of resources and well-being between employees and their partners differ by their gender, partner's employment status, and living with children in the household.

Present Study

We draw upon data from a randomized workplace intervention, named "Support-Transform-Achieve-Results (STAR)," implemented as part of the Work, Family & Health Study (WHFS; Bray et al., 2013; Kelly et al., 2014). The STAR workplace intervention was designed to increase employees' schedule control and supervisor support for family life – two workplace resources that the W-HR model (ten Brummelhuis & Bakker, 2012) argues have implications for family resources and well-being. In this paper, we first examined the effects of the STAR workplace intervention on two indicators of partner-reported family resources – employees' work schedule flexibility to handle family responsibilities and family time adequacy. Our first set of hypotheses testing the crossover of resources in employee-partner dyads was:

Hypothesis 1: The STAR intervention will increase partner perceptions of employees' work schedule flexibility for family at the 12-month follow-up, through employees' increased schedule control at the 6-month follow-up.

Hypothesis 2: The STAR intervention will increase partner perceptions of family time adequacy at the 12-month follow-up, through employees' increased schedule control at the 6-month follow-up.

Second, we tested the crossover of well-being within employee-partner dyads, whether one partner's additional work resources predicted decreases in his/her perceived stress, which, in

turn, predicted decreases in the partner's perceived stress. Our last hypothesis involving the two step paths was:

Hypothesis 3: The STAR intervention will decrease partner's perceived stress at the 12-month follow-up. This effect will be explained by the effect of employees' increased schedule control on their perceived stress at 6 months (spillover; H3a), which will be carried over to employees' perceived stress at 12 months that linked to the partner's perceived stress at 12 months (crossover of well-being; H3b).

Findings from this study will contribute to translational research in the field of work and family by showing how a flexible work practice adopted by an industry sector can improve the employees' and their partners' well-being.

Method

Participants

Data came from the Work, Family, and Health Study (WFHS), a field trial testing the effects of a workplace intervention on employees', families', and organizations' well-being (Bray et al., 2013; Kelly et al., 2014). Researchers partnered with the information technology (IT) division of a U.S. company. Worksite recruitment was done in conjunction with the Industry Advisory Board. Selection criteria included adequate support from local management, worksite size and geographic proximity to other study sites, and ability to support logistically the intervention delivery and data collection. A total of 56 work teams all over the country were identified and randomized to either the STAR or the control/Usual Practice (UP) condition (Kelly et al., 2014). Employees were eligible to participate if they were regular employees (not contractors) located in the worksites where data collection occurred. Of 823 employees completing the baseline interview, 653 employees were married or lived with a permanent romantic partner. All spouses or cohabiting partners of these employees (for at least one year) were eligible for study participation and invited to participate in the study at baseline and 12 months later. Of the 653 partnered employees, 455 employees' spouses/partners participated in the baseline survey. The 455 employees did not significantly differ from 198 (653–455) employees who were partnered but their partner did not participate in the surveys, in terms of employee age, gender, race, education, work hours, intervention condition, and baseline schedule control and perceived stress. Of the 455 partners who provided baseline data, 334 partners were re-assessed at 12 months later. The 334 partners also did not significantly differ from the attriters (n=121) in baseline characteristics, including age, education, employment status, intervention condition, perceptions of employees' work schedule flexibility, family time adequacy, and stress, except for race; attriters were more likely to identify as non-white than white, non-hispanic. Among the 334 partners' paired employees, 327 provided data both at 6 months and 12 months. Thus the final analytic sample of the current study consisted of 327 employee-partner dyads, including 13 same sex couples. Their demographic information is provided in Table 1.

Procedures

Trained interviewers obtained informed consent and then conducted computer-assisted personal interviews with the employees at the workplace at baseline and again at the 6-month follow-up. Partners were recruited to participate in a telephone interview through contact information provided by the employee, and through recruitment communication given to the employee to provide to the spouse or partner directly. Partners who completed the baseline interview and were still living with the employee at 12-months were asked to participate in a 12-month partner interview by telephone. The workplace interviews with employees lasted on average 58 minutes per assessment, and the telephone interview time with partners averaged about 32 minutes per assessment. Employees and their partners each received \$20 at baseline and additional \$20 at each follow-up for their participation.

The STAR Workplace Intervention

Following baseline interviews, a randomized workplace intervention (“STAR”), designed to increase employees’ schedule control and supervisor support for family and personal life (Bray et al., 2013), was implemented ($n=172$ intervention, $n=155$ control). The intervention consisted of a 3-month structural and cultural change process, including two types of main activities. The first was facilitator-led sessions for all employees in the intervention condition (with their managers present) to identify new work practices to help transition from rigid work schedules to giving employees more control over when and where they work. Examples include cross-training to provide back-ups, possibility of remote work, and self-scheduling. The second was training managers/supervisors in the intervention condition to demonstrate support for employees’ personal and family lives while also supporting employees’ job performance. Specifically, managers/supervisors completed computer-based training that taught them about (1) personal and business reasons for reducing work-life conflicts, (2) top management support for this initiative, and (3) example behaviors and strategies that demonstrate both professional and personal support to their employees. Participatory sessions for employees lasted eight hours, and managers attended an additional four hours of training (for details on STAR procedures see Kelly et al., 2014; Kossek et al., 2014). All procedures were conducted in accordance with established ethical guidelines, and approved by appropriate Institutional Review Boards.

The STAR intervention has proven to be effective in increasing employees’ schedule control as the intervention intended (Kelly et al., 2014). Previous research has also reported that the STAR intervention significantly increased employees’ daily time spent with children, daily time adequacy for personal life, and nightly sleep duration measured by actigraphy (Davis et al., 2015; Lee et al., 2016; Lee, McHale, Crouter, Kelly, et al., 2017; Olson et al., 2015). These intervention effects were found across different work sites with lack of variance at the work site level (Almeida et al., 2018; Lee et al., 2016; Lee, McHale, Crouter, Kelly, et al., 2017). Consistency across different work sites was assured by using a facilitator’s guide and semi-structured scripts for the facilitator-led sessions. Moreover, the STAR intervention utilized virtual training sessions and the company intranet, because many work groups were not co-located in the same building. This allowed employees working in different locations to participate in the same intervention conversations with their managers and team members. Note that the WFHS includes another sample of employees in extended-care industry who

provide direct care to older residents in nursing homes. The STAR intervention was also implemented in the extended-care settings with industry-specific customization, but there was lack of intervention effects, potentially due to different nature of work (see Kelly et al., 2014; Marino et al., 2016, for more discussions).

Measures

Employee-reported schedule control.—At baseline and the 6-month post-intervention follow-up, employees reported how much choice they had over eight dimensions of control over work schedule (Thomas & Ganster, 1995). The items are, “How much choice do you have over (1) when you take vacations or days off, (2) when you can take off a few hours, (3) when you begin and end each work day, (4) the total number of hours you work each week, (5) doing some of your work at home or at another location, instead of at the workplace, (6) the number of personal phone calls you make or receive while you work, (7) the amount or times you take work home with you, and (8) shifting to a part-time schedule (or full-time if currently part-time) while remaining in your current position if you wanted to do so?” Responses ranged from 1 (*very little*) to 5 (*very much*). We used the mean of the 8 items for the schedule control scale where employees responded to at least 6 items out of the 8 items. The Cronbach’s α of schedule control was .78 and .84, at baseline and 6 months, respectively.

Employee-reported perceived stress.—At baseline and the 6-month follow-up, employees responded to 4 items from the Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983). PSS is the most widely used scale of stress appraisals and has been found to be predictive of many adverse physical and mental health outcomes. The items read, “During the past 30 days, how often have you felt (1) that you were unable to control the important things in your life, (2) confident about your ability to handle your personal problems, (3) that things were going your way, and (4) difficulties were piling up so high that you could not overcome them? Responses were coded as 1 (*never*) to 5 (*very often*). We used the mean of the 4 items where partners responded to at least 3 items. The Cronbach’s α of employees’ perceived stress was .74, .75, and .77 at baseline, 6 months, and 12 months, respectively.

Partner-reported employees’ work schedule flexibility for family.—Partners reported the level of flexibility the employee had in work schedule to handle family responsibilities at baseline and 12 months. Based on Neal and Hammer’s (2007) spousal crossover work, the following item was asked: “How much flexibility does your spouse/partner have in his/her work schedule to handle family responsibilities? Responses ranged from 1 (*no flexibility at all*) to 4 (*a lot of flexibility*). This item was validated in Hammer et al.’s (1997) study of bank employees and their spouses/partners.

Partner-reported family time adequacy.—Partner perceived family time adequacy was measured by 2 items, which were derived from part of the larger Family Resource scale-revised (Van Horn, Bellis, & Snyder, 2001) for family roles. The items were: “To what extent is there enough time (1) to be with your spouse/partner and (2) to care for the needs of other family members?” Responses were coded as 1 (*never*) to 5 (*all of the time*). We used

the mean of the 2 items where partners responded to both items. The Cronbach's α between the 2 items were .52 and .50 at baseline and 12 months, respectively. Family time adequacy questions have been used in several studies separately for each domain (e.g., time adequacy to be with partner) or as a scale (DePasquale et al., 2017; Soomi Lee et al., 2015; Soomi Lee, McHale, Crouter, Kelly, et al., 2017).

Partner-reported perceived stress.—We used the 4 items from the Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983), the same items used to assess employees' perceived stress. Responses were coded as 1 (*never*) to 5 (*very often*). We also used the mean of the 4 items (allowed 1 item missing), such that higher scores reflected higher perceived stress. The Cronbach's α of partners' perceived stress was .73 and .79 at baseline and 12 months, respectively.

Covariates.—We considered employees' and partners' background characteristics as potential covariates that may influence their perceptions about resources and stress (Almeida et al., 2018; Soomi Lee, McHale, Crouter, Kelly, et al., 2017). Those were employees' and partners' gender (0=*women*, 1=*men*), age (in years), race (0=*white*, 1=*non-white*), and educational level (0=*college graduate or more*, 1=*less than college graduate*). We also considered marital status (0=*married*, 1=*cohabiting*) and number of children (couples without a child had 0 value). In addition, we included employees' work hours and partners' employed status (0=*employed*, 1=*not employed*) at baseline. All continuous covariates were centered at the sample mean.

Analytic Strategy

We estimated the models via Structural Equation Modeling (SEM) using MPlus Version 7.2. We used maximum likelihood estimation with robust standard errors. Model goodness-of-fit was evaluated using Hu and Bentler's (1999) criteria: (a) nonsignificance in the result of chi-square test; (b) the root mean square error of approximation (RMSEA) no more than .06; (c) the root mean squared residual (SRMR) no more than .08; and (d) the comparative fit index (CFI) and the Tucker-Lewis index (TLI) closer to .95 or greater.

To test whether the workplace intervention predicted changes in partner perceptions of family resources and stress through changes in employees' schedule control and stress, we used residualized gain approach. This approach can take into account differences in change due to baseline levels (Castro-Schilo & Grimm, 2018). For example, when predicting partners' perceived stress at 12-month post-intervention follow-up, we controlled for its baseline level; as such, we controlled for baseline levels of all follow-up outcomes and mediators. Given that employees were nested within worksites, we examined the proportion of variance at the worksite level in our partner-reported outcome variables. The Intra-class Correlations (ICCs) of the variables were nearly 0 (0 to 0.02), meaning that there was lack of variance at the worksite level in employee-partners' reports. Thus, we did not account for that nested structure. The initial model included all potential covariates; only significant covariates were retained in the final model.

Results

Table 1 presents baseline descriptive statistics of all variables used in this study, separately by the intervention condition. Partner characteristics showed that 69% were women and their mean age was 46 years ($SD = 9.32$). The majority were White (74%) and more than half (63%) were college graduates. Nearly all partners (94%) were married with employees; only 6% were cohabiting. The number of children living in the household was averaged at 1 ($SD = 1.07$), and 63% had at least one child. Seventy-nine percent of partners worked at baseline; most of them (93%) also worked at 12 months; only 25% and 23% worked part-time (less than 35 hours/week) at baseline and the 12-month follow-up, respectively. The percentage of part-time working partners did not differ between the intervention and control conditions. In our analyses, we combined partners' full-time and part-time employment together. Employee characteristics were similar, such that the majority were White (73%) and college graduates (81%). The mean work hours were 45 hours per week ($SD = 9.32$); nearly all ($n=326$, 99.7%) of the employees worked full-time (work ≥ 35 hours per week); only one employee worked 30 hours per week. There were no significant baseline differences in these background characteristics between the intervention and control groups. The chi-squared test of partner's race suggested a difference by the intervention condition; however, the test statistic may not be reliable due to small cell sizes. The chi-squared test with reduced race categories (non-white vs. white) was not statistically significant ($\chi^2(1) = 0.007$, $p = .936$).

In terms of our main variables, employees reported a moderate to high level of schedule control ($M = 3.60$, $SD = 0.66$, $Range = 1-5$) and a low level of perceived stress ($M = 8.45$, $SD = 2.59$, $Range = 4-20$) at baseline. Employees' partners evaluated that the employee had some flexibility in work schedule to handle family responsibilities ($M = 3.14$, $SD = 0.65$, $Range = 1-4$) and reported a moderate level of family time adequacy ($M = 3.44$, $SD = 0.67$, $Range = 1-5$). Partners' perceived stress was low on average at baseline ($M = 8.31$, $SD = 2.74$, $Range = 4-20$). Again, there were no baseline differences in these main variables between the intervention and control groups.

On average across intervention conditions, employees' schedule control increased from baseline to 6 months (Appendix A). Although the mean change was not large ($M_{\text{change}} = 0.19$), there was a great deal of variability ($Range_{\text{change}} = -1.5$ to 2.5). Intervention employees increased significantly more than control employees. Over time, employees' perceived stress decreased from baseline to 6 months and also from baseline to 12 months, with no difference by intervention condition. Partner-reported employees' work schedule flexibility for family roles and family time adequacy increased from baseline to 12 months, more for intervention employee-partners. Partners' perceived stress also decreased from baseline to 12 months with great variability ($Range_{\text{change}} = -9$ to 7).

Figure 2 shows the results of the final SEM. Fit indices suggested that the model fit the data well: $\chi^2(54) = 58.314$, $p = .320$; RMSEA = .016; SRMR = .034; CFI = .995; and TLI = .993. "a" and "b" refer to indirect pathways linking intervention effects to partner-perceived family resources; "c" refers to direct effect of the intervention on partner-perceived family resources. Beginning with the paths predicting partner-reported employees' work schedule flexibility for family, the intervention significantly increased employees'

schedule control at the 6-month follow-up (“a” path: $\beta = 0.16, p < .001$) as found in the previous analysis based on a larger employee sample (Kelly et al., 2014). This, in turn, significantly increased partner perceptions of employees’ work schedule flexibility for family at 12 months (“b” path: $\beta = 0.14, p < .01$). Note that there was also the direct effect of the intervention on partner-reported employees’ work schedule flexibility for family (“c” path: $\beta = 0.13, p < .05$). On the whole, then, there was a significant indirect effect of the intervention on partner-reported employees’ work schedule flexibility for family mediated by employees’ schedule control (*Indirect Effect* = 0.03, *SE* = 0.01, $p < .05$). Therefore, our hypothesis (H) 1 that the STAR intervention would increase partner perceptions of employees’ work schedule flexibility for family through employees’ increased schedule control was supported.

Turning to the paths predicting partner-reported family time adequacy, increases in employees’ schedule control did not significantly predict changes in family time adequacy at 12 months. There was no direct effect of the workplace intervention on family time adequacy either. Thus, our H2 that the STAR intervention would increase partner perceptions of family time adequacy through employees’ increased schedule control was not supported.

Figure 3 shows the results testing the spillover and crossover of well-being (assessed by perceived stress) between employees and their partners. The paths presented in Figure 3 are included in the same model with those in Figure 2. There was a significant direct effect of the workplace intervention on decreased partner-perceived stress at 12 months (“c” path: $\beta = -0.09, p < .05$). This effect was explained by two indirect pathways linking the intervention to partner-perceived stress. First, consistent with the prior model, the intervention increased employees’ schedule control at 6 months (“a” path). Increases in schedule control were further associated with decreases in perceived stress of the employees at 6 months (“b1” path: $\beta = -0.14, p < .01$). Although the intervention did not predict employees’ perceived stress, it significant decreased employees’ perceived stress at 6 months mediated by employees’ schedule control at 6 months (*Indirect Effect* = -0.10, *SE* = 0.05, $p < .05$). Thus, our H3a that predicts spillover effect of employees’ increased schedule control from a workplace intervention on their perceived stress was supported. In addition, employees’ perceived stress at 6 months was linked to their perceived stress at 12 months (“b2” path: $\beta = 0.50, p < .001$), which, further predicted their partner’s perceived stress at 12 months (“b3” path: $\beta = 0.13, p < .01$). The pathway from employees’ perceived stress at 6 months → employees’ perceived stress at 12 months → partners’ perceived stress at 12 months was significant (*Indirect Effect* = 0.08, *SE* = 0.03, $p < .05$). Thus, our H3b that predicts crossover of well-being between employees and their partner was also supported. Taken together, our H3 linking the STAR intervention to partners’ perceived stress through employees’ increased schedule control and decreased stress was supported.

These results were found after taking into account baseline levels of outcomes and mediators. The model also adjusted for significant covariates. Those include number of children predicting increases in partner-reported employees’ work schedule flexibility for family at 12 months ($\beta = 0.13, p < .01$), partner age predicting increases in their perceptions of family time adequacy at 12 months ($\beta = 0.15, p < .01$), employees’ work hours predicting

increases in their perceived stress at 6 months ($\beta = 0.10, p < .05$), and employees' race (non-white vs. white) predicting increases in their perceived stress at 12 months ($\beta = 0.09, p < .05$).

Note that the final model did not significantly differ by the employees' or partners' gender ($\chi^2(54) = 70.87, p = .061$, ($\chi^2(54) = 70.34, p = .067$, respectively) or by partners' employment status ($\chi^2(54) = 63.32, p = .181$). However, the model differed by the presence of children in the household ($\chi^2(44) = 62.08, p = .037$). In our sample, 207 couples (63%) lived with children (at any age). Crossover of resources was only found in couples with children, but not in couples without children. In couples with children, the intervention increased employees' schedule control ($\beta = 0.16, p < .01$), which further predicted increases in partner-reported employees' work schedule flexibility for family ($\beta = 0.15, p < .05$). Crossover of well-being was also apparent only in couples with children. The intervention decreased employee-partner's perceived stress at 12 months ($\beta = -0.11, p < .05$). Specifically, employees' increased schedule control by the intervention decreased employees' perceived stress at 6 months ($\beta = -0.12, p < .05$), which further predicted their perceived stress at 12 months ($\beta = 0.43, p < .001$). Employees' perceived stress was associated with their partner's perceived stress at 12 months, albeit at a trend level ($\beta = 0.11, p = .07$). We also tested whether the associations were stronger for couples who lived with younger children (age ≤ 18 years), however some of the links became non-significant (but the betas were in the expected direction) due to reduced sample size ($n=167$).

In supplementary analyses (available from authors upon request), we explored the associations with other partner well-being measures, such as physical health symptoms, sleep quality, and relationship satisfaction. However, no significant effects of the workplace intervention on other aspects of partner well-being were found.

Discussion

Building on the Work-Home Resources (W-HR) model (ten Brummelhuis & Bakker, 2012) and crossover theory (Bolger et al., 1989; Westman, 2001), this study examined the crossover of resources and well-being between employees and their partners. The results found that a workplace intervention increased employees' schedule control, which, in turn, increased partner perceptions of employees' work schedule flexibility to handle family responsibilities. Moreover, increases in employees' schedule control predicted decreases in the employees' perceived stress over time, which, in turn, predicted decreases in their partner's perceived stress. These findings suggest that one partner's additional resources obtained from work do influence the other partner's perceived family resources and well-being. Strengths of this study include the use of a randomized workplace intervention and longitudinal follow-ups that allow for causal inference and the inclusion of both employees' and their partner's reports that increase our confidence in interpreting the benefits of the intervention. Findings from this study advance the work-family literature by demonstrating that workplace support can permeate into the family domain, influencing the paired partner at home, beyond the employees.

Employees' Increased Schedule Control From the Workplace Intervention Predicted Increases in Partner Perceptions of Employees' Flexibility for Family

As expected, we found that the STAR workplace intervention increased employees' schedule control at the 6-month follow-up, which, in turn, increased partner perceptions of employees' work schedule flexibility to handle family responsibilities at the 12-month follow-up. The results provide strong evidence for the W-HR model (ten Brummelhuis & Bakker, 2012) in that one partner's additional resource obtained from the work domain was linked to the other partner's perception of having more of the resource in the family domain. Our study design that included pre- and post-intervention reports from both employees and their partners enabled us to test the crossover of resource gains within employee-partner dyads (Bakker et al., 2009; Westman, 2001). Importantly, our findings demonstrate that schedule control is an important work resource, not only for employees' flexibility (Briscoe, 2007; Moen et al., 2011), but also for employee's partner's perception that their partner (employee) has temporal flexibility for the family.

In our study, the benefits of the STAR intervention were found independent of employee/partner sociodemographic and background characteristics. However, it is worth to note that the benefit of the STAR intervention in increasing partner-perceptions of employees' work schedule flexibility for family was more apparent in couples who lived with dependent children. Perhaps, couples with childcare responsibility needed more flexibility in the household, and thus the spouses might have been more sensitive to their employee-partner's increased flexibility by the workplace intervention. Note that the benefit of the intervention in decreasing partner's perceived stress was also more salient for couples with children. Previous research also found a similar tendency of a greater need of workplace support in households with childcare responsibility (Kossek et al., 2017). We did not find any differences in the crossover of resources and well-being by employees' or partners' gender or by partners' employment status. These additional findings may inform future workplace intervention strategies – employees with children are those who need flexibility more and the effects of a workplace intervention can be larger for these employees by influencing their partners as well. Overall, our findings suggest that, when workplace support helps employees increase *control over when and where to work*, the benefits are transmitted to not simply the worker, but to the partner, as well, an important implication for future workplace policies.

We did not find, however, such benefits of the STAR intervention in terms of partner perceptions of family time adequacy. Descriptive statistics showed a greater increase in partner-reported family time adequacy in the intervention group than in the control group (Appendix A), but the effect of the intervention was not found in a more rigorous test that controlled for sociodemographic covariates and baseline level of family time adequacy (Figure 2). Perhaps, the intervention was not sufficient to change partner perceptions of having enough (or not enough) time for family. Time adequacy may relate to trait-like characteristics, such as role stress or role salience (Lee et al., 2015). Due to social expectation that highly values family time (Hays, 1996; Milkie, Mattingly, Nomaguchi, Bianchi, & Robinson, 2004), partners might have responded similarly to the family time adequacy questions over time regardless of employees' increased schedule control from the

intervention. Previous research using a daily diary design also reported the null effect of the STAR intervention on employed parents' daily time adequacy for family roles (Lee, McHale, Crouter, Kelly, et al., 2017). The null effect on family time adequacy might be due to that the measure did not capture specific aspects of time adequacy for family roles. Future studies should continue to make efforts to improve perceived time adequacy in the family domain as family time is often compromised by work responsibilities and demands.

Employees' Increased Schedule Control From the Intervention Predicted Decreases in Partners' Perceived Stress Through Decreases in Employees' Perceived Stress

This study evidenced positive spillover and crossover processes linking the STAR workplace intervention to decreases in partners' perceived stress. Increased schedule control from the intervention predicted decreases in employees' perceived stress at 6 months. This process represents *spillover* by showing how employees' additional resources obtained from the work domain influence their well-being (Grzywacz & Marks, 2000). Moreover, employees' perceived stress over 6- and 12-month follow-ups further predicted their partner's perceived stress at 12 months. This process linking employees' and their partner's stress over time, clearly reflects crossover effect (Demerouti, 2012; Westman, 2001). Previous studies reported crossover effects within couples (Debus & Unger, 2017; Hammer et al., 1997; Pedersen, 2014; Westman & Hamilton, 2004). Most of these studies, however, focused on negative crossover, such that one partner's negative aspects of work (e.g., job insecurity or work-to-family conflict) crossed over to the other partner. The current study advances the crossover literature by demonstrating that work resource gains by one partner have the potential to decrease the other partner's perceived stress in couple relationships.

Limitations and Future Directions

In the face of its contributions, limitations of this study imply directions for future research. First, our sample was drawn from employees in the information technology in a large firm and their married/cohabiting partners; the sample is relatively privileged in income and education compared to other U.S. workers. Future research should examine these questions with samples of employee-partner dyads with less education and less income. Also note that this type of intervention designed to increase employees' schedule control may not be relevant in other work contexts as was in the IT industry. As mentioned earlier, a similar workplace intervention implemented in extended-care settings (for nursing home workers) was less effective. Due to the nature of work that requires nonstandard, varying, and unpredictable schedules to meet the needs of older residents (Lee et al., 2017), addressing schedule control may be less relevant in the extended-care industry. For employees in such occupational sector, a different intervention strategy would be needed to decrease their work-family conflict and time demands on the families. To better understand specific needs by industry sector, future translational research on flexible work practices could consider engaging the employees and top-level management in the design and implementation of the study. Second, the randomization to treatment occurred at the larger work group level, not at the employee level or at the employees' family context level (Bray et al., 2013). Although there were no significant baseline differences in sociodemographic and study variables by the intervention conditions, employees in the two intervention conditions might have had different work and family contexts that the current study could not capture. In addition, the

intervention employees might not have been able to take advantage of schedule control provided by the intervention given that their partners (who were not a part of the intervention) did not cooperate (e.g., gatekeeping; Fagan & Barnett, 2003). Future workplace interventions may need to consider targeting both partners within families while involving randomization of employees to treatment.

Conclusion

This study highlights that the benefits of workplace support to increase schedule control can permeate into the family domain by affecting partners' perceptions of employees' work schedule flexibility for family responsibilities and partners' perceived stress. At the most general level, lack of time and lack of schedule control are significant stressors for families, and thus organizations should continue to make efforts to decrease time-related tensions and increase temporal flexibility of employees. Future work should examine the implications of work time flexibility for long-term family well-being, by considering how couples adjust their perceived and actual work schedule to their partner's.

Acknowledgements:

This research was conducted as part of the Work, Family and Health Network (www.WorkFamilyHealthNetwork.org), which is funded by a cooperative agreement through the National Institutes of Health and the Centers for Disease Control and Prevention: Eunice Kennedy Shriver National Institute of Child Health and Human Development (Grant # U01HD051217, U01HD051218, U01HD051256, U01HD051276), National Institute on Aging (Grant # U01AG027669), Office of Behavioral and Social Sciences Research, and National Institute for Occupational Safety and Health (Grant # U01OH008788, U01HD059773). Grants from the National Heart, Lung, and Blood Institute (Grant #R01HL107240), William T. Grant Foundation, Alfred P. Sloan Foundation, and the Administration for Children and Families have provided additional funding.

Appendix A.: Longitudinal changes in the main variables of interest

	Change 6M - B									Change 12M - B								
	Total			Intervention		Control		T-Test	Total			Intervention		Control		T-Test		
	M	(SD)	Range	M	(SD)	M	(SD)		M	(SD)	Range	M	(SD)	M	(SD)			
E Schedule Control	0.19	(0.55)	-1.5 to 2.5	0.30	(0.57)	0.07	(0.51)	3.74	***									
E Perceived Stress	-0.26	(2.21)	-11 to 6	-0.11	(2.03)	-0.43	(2.39)	1.31		-0.35	(2.36)	-11 to 7	-0.33	(2.24)	-0.37	(2.49)	0.14	
P-reported E's Work Schedule Flexibility for Family Responsibilities										0.15	(0.68)	-2 to 2	0.24	(0.72)	0.05	(0.61)	2.62	**
P-reported Family Time Adequacy										0.05	(0.69)	-2.5 to 2	0.13	(0.71)	-0.04	(0.67)	2.08	*
P Perceived Stress										-0.08	(2.49)	-9 to 7	-0.27	(2.34)	0.12	(2.63)	-1.41	

Note. N=327. E refers to employees; P refers to employee's spouse/partners.

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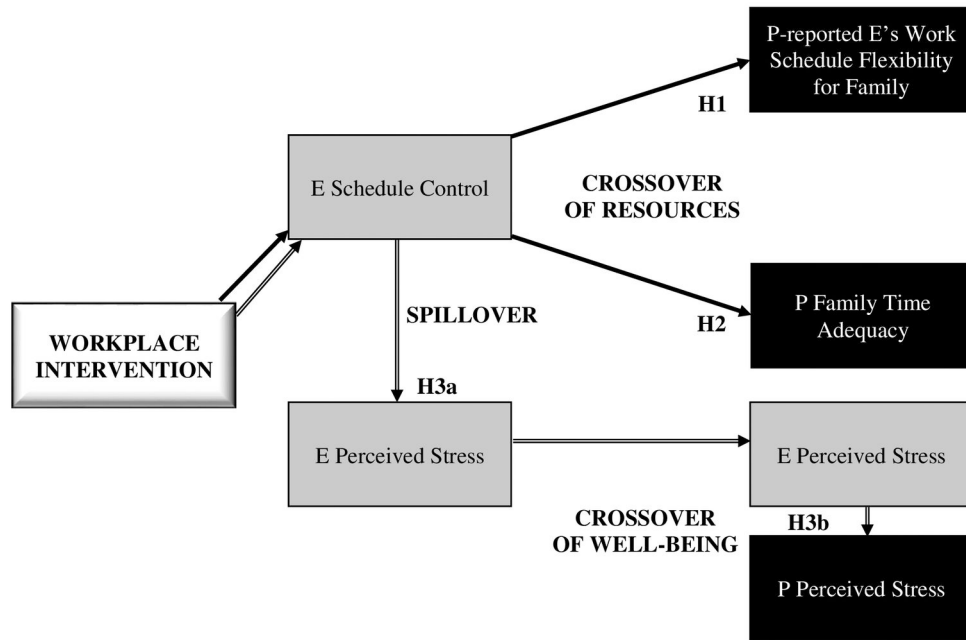
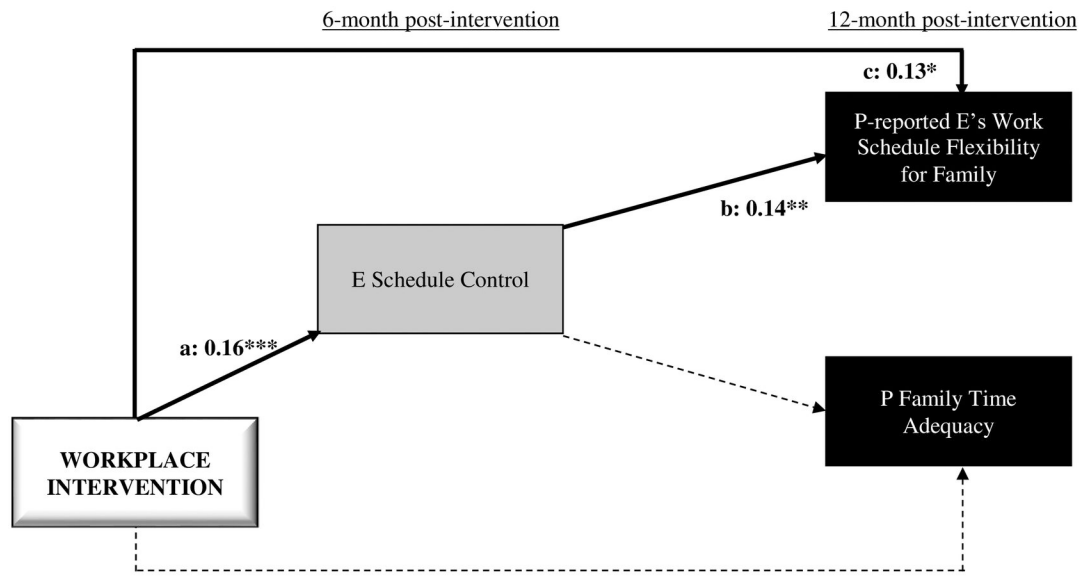


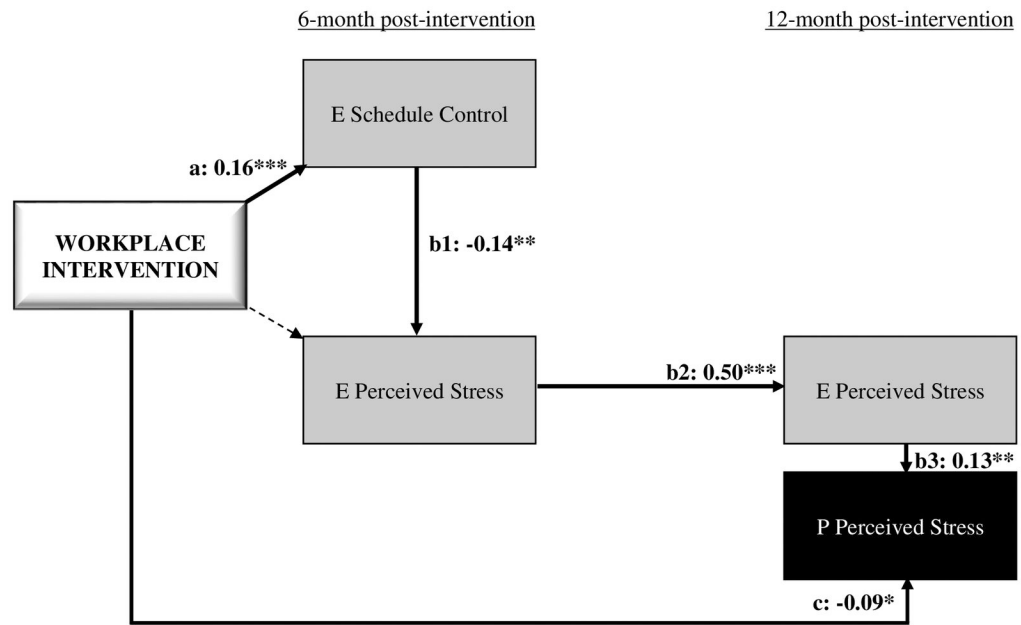
Figure 1. Research model examining the crossover of resources and well-being between employees and their partner.

Note. E refers to employees; P refers to employee’s spouse/partners. H represents hypothesis. Paths with → test crossover of resources (hypotheses 1 and 2). Paths with → test crossover of well-being (hypotheses 3a and 3b). Grey boxes represent employee-reported mediators. Black boxes represent partner-reported outcomes.



Fit indices: $\chi^2(54) = 58.314, p = .320$; RMSEA = .016; SRMR = .034; CFI = .995; and TLI = .993.

Figure 2. The structural equation model with standardized parameters for hypotheses 1 and 2. *Note.* $N=327$ couples; 324 observations were used due to missing responses in the variables. Figure 2 and 3 represent one model. E refers to employees; P refers to employee’s spouse/ partners. Standardized betas are presented. **Paths related to hypothesis 1 are bolded** (hypothesis 2 was not supported). “a” and “b” refer to indirect pathways; “c” refers to direct effect. Dotted lines represent non-significant paths; non-bolded solid lines represent significant controls. For ease of presentation, the paths for covariates (including baseline levels of the mediator and outcomes) are not displayed but are available upon request. * $p < .05$, ** $p < .01$, *** $p < .001$.



Fit indices: $\chi^2(54) = 58.314, p = .320$; RMSEA = .016; SRMR = .034; CFI = .995; and TLI = .993.

Figure 3. The structural equation model with standardized parameters for hypotheses 3a and 3b.

Note. $N=327$ couples; 324 observations were used due to missing responses in the variables.

Figure 2 and 3 represent one model. E refers to employees; P refers to employee's spouse/partners. Standardized betas are presented. **Paths related to hypotheses 3a and 3b are bolded.** "a" and "b" refer to indirect pathways; "c" refers to direct effect. Indirect pathways of a and b1 relate to H3a. Indirect pathways of b2 and b3 relate to H3b. On the whole, H3 tests the indirect effect of the intervention on partners' perceived stress through employees' increased schedule control and decreased perceived stress. Dotted lines represent non-significant paths; non-bolded solid lines represent significant controls. For ease of presentation, the paths for covariates (including baseline levels of the mediator and outcomes) are not displayed but are available upon request.

* $p < .05$, ** $p < .01$, *** $p < .001$.

Table 1.

Baseline descriptive statistics, by workplace intervention condition

	Total (N = 327)		Intervention (n = 172)		Control (n = 155)		Diff Tests
	M or %	(SD)	M or %	(SD)	M or %	(SD)	t-test/ χ^2
<i>Sociodemographic and Background Characteristics</i>							
<i>Employee (E) characteristics</i>							
E Gender (%)							1.41
Women	30.28		33.14		27.10		
Men	69.72		66.86		72.90		
E Age (in years)	46.48	(8.63)	47.08	(8.82)	45.83	(8.39)	1.31
E Race (%)							8.05
White, Non-Hispanic	73.09		70.35		76.13		
Asian Indian	11.31		9.30		13.55		
Other Asian or Pacific Islander	6.42		8.14		4.52		
Hispanic	6.12		8.14		3.87		
Black, Non-Hispanic	1.83		2.91		0.65		
More than one race	1.22		1.16		1.29		
E Education (%)							0.49
College graduates	81.04		80.81		81.29		
Some college or technical school	17.13		16.86		17.42		
High school graduates	1.83		2.33		1.29		
E Work Hours	45.26	(5.13)	45.10	(4.58)	45.45	(5.69)	-0.60
<i>Partner (P) characteristics</i>							
P Gender (%)							0.33
Women	69.42		68.02		70.97		
Men	30.58		31.98		29.03		
P Age (in years)	45.94	(9.32)	46.55	(9.13)	45.26	(9.51)	1.24
P Race (%)							11.20 *2
White, Non-Hispanic	74.31		73.84		74.84		
Asian Indian	12.54		9.88		15.48		
Other Asian or Pacific Islander	6.12		9.88		1.94		
Hispanic	5.50		4.65		6.45		
Black, Non-Hispanic	0.92		1.16		0.65		
More than one race	0.61		0.58		0.65		
P Education (%)							1.14
College graduates	63.30		61.05		65.81		
Some college or technical school	25.99		26.74		25.16		
High school graduates	10.70		12.21		9.03		
P Work Status (%)							1.69
Has full-time or part-time job	79.20		82.98		76.13		
Not working	20.80		18.02		23.87		
<i>Family characteristics</i>							

	Total (N = 327)		Intervention (n = 172)		Control (n = 155)		Diff Tests
	M or %	(SD)	M or %	(SD)	M or %	(SD)	t-test/ χ^2
Partnered Status (%)							0.22
Married	93.58		94.19		92.90		
Cohabiting	6.42		5.81		7.10		
Number of children	1.10	(1.07)	1.05	(0.97)	1.15	(1.16)	-0.86
Parents (%)	63.30		62.79		63.87		0.04
<i>Main Variables</i>							
E Schedule Control (1–5)	3.60	(0.66)	3.57	(0.68)	3.62	(0.64)	-0.69
E Perceived Stress (4–20)	8.45	(2.59)	8.27	(2.45)	8.66	(2.73)	-1.36
P-reported E's Work Schedule Flexibility for Family Responsibilities (1–4)	3.14	(0.65)	3.12	(0.69)	3.17	(0.61)	-0.65
P-reported Family Time Adequacy (1–5)	3.44	(0.67)	3.40	(0.70)	3.50	(0.63)	-1.33
P Perceived Stress (4–20)	8.31	(2.74)	8.20	(2.80)	8.44	(2.67)	-0.80

Note.

a) Chi-square test may not be a valid test because 33% of the cells had expected counts less than .5. Chi-square test for reduced race categories (non-white vs. white) was not statistically significant ($\chi^2(1) = 0.007, p = .936$).

* $p < .05$,

** $p < .01$,

*** $p < .001$.