

Individual and Crossover Effects of Work Schedule Fit: A Within-Couple Analysis

A couple-level analysis with a sample of 105 female reduced-hours physicians and their full-time-employed husbands found individual and spouse crossover effects: Each spouse's ratings of own schedule fit predict own job-role quality; wives' ratings of partner/family schedule fit predict their marital-role quality, with a similar trend for husbands; husbands' ratings of own schedule fit predict wives' marital-role quality; and husbands' ratings of partner/family schedule fit and wives' ratings of own schedule fit predict husbands' psychological distress. These findings highlight the interdependence of couple members' experiences and illustrate potential costs of wives' trading off time at work for time at home.

The literature on the work-family interface has been characterized by a focus on employees as autonomous agents, not as members of dyads in which each partner's job and family experiences affect the other partner's social-role experiences. A number of studies provide convincing evidence

of crossover effects from one member of a couple to the other, however (e.g., Barling, 1984; Hammer, Allen, & Grigsby, 1997; Ozer, Barnett, Brennan, & Sperling, 1998; Raudenbush, Brennan, & Barnett, 1995; Rook, Dooley, & Catalano, 1991). To adequately model the work-family interface, one must take into account the relationship between one partner's job characteristics and outcomes for the other partner; ideally, such data should be collected from both partners in order to allow for the analysis of crossover effects.

In the present study, we have data from both members of married couples and employ an analysis strategy, hierarchical linear modeling (HLM; Raudenbush & Bryk, 2002), that retains the couple membership of each spouse (Raudenbush et al., 1995). A common shortcoming of several previous studies of dual-earner couples is that they estimate separate predictive models for husbands and wives (e.g., Westman & Etzion, 1995), in essence discarding the relationship between the two and treating them as if they came from independent populations. HLM is also a flexible strategy to test for crossover effects in which a predictor variable measured in one spouse is associated with an outcome variable measured in the other spouse (Barnett & Brennan, 1998; Raudenbush et al.). Applying HLM to the analysis of data from couples accounts for the dependence of observations for each of the members, controls for both individual- and couple-level predictors, adjusts for

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measurement error in estimating within-couple correlations and in estimating proportions of variance explained by the model, and allows for explicit testing of gender differences (Barnett, Brennan, Raudenbush, Pleck, & Marshall, 1995; Barnett, Marshall, Raudenbush, & Brennan, 1993; Raudenbush et al.). Finally, the same modeling strategy is suitable for multiple outcomes for each person (Brennan, Kim, Wenz-Gross, & Siperstein, 2001; Supovitz & Brennan, 1997). Thus, our approach allows us to model simultaneously six outcomes (husband's and wife's job-role quality, marital-role quality, and psychological distress) in a single, two-level HLM (Ozer et al., 1998).

In addition to a narrow focus on employees as individuals, the mainstream organizational psychology literature on work-family issues typically characterizes work and family as spheres of life that are in competition for such scarce resources as time and attention (Barnett, 1998; Gutek, Searle, & Klepa, 1991). Excessive work hours have been related to such negative outcomes as marital tension (Hughes & Galinsky, 1994); numerous studies challenge the zero-sum assumption, however, finding either no relationship (e.g., Crouter, Bumpus, Head, & McHale, 2001) or a positive relationship (e.g., Ozer et al., 1998; Wethington & Kessler, 1989) between number of hours worked and outcomes. Marks, Huston, Johnson, and MacDermid (2001) found a positive relationship between work hours and role balance among wives, but a negative relationship between the same variables among husbands in their study. Inconsistent findings about the relationship between work hours and outcomes, along with a growing body of research demonstrating work-family synergy (Bailyn, 1993) and salutary effects of multiple-role involvement (Barnett & Hyde, 2001; Marks & MacDermid, 1996) also challenge the inevitability of the zero-sum assumption.

Work and family may more accurately be depicted as overlapping spheres that are often in harmony (see Barnett, 1998, for a fuller discussion). The concept of fit, first introduced by Pittman (1994; see also Bowen, 1998; Bowen, Orthner, & Bell, 1997), comports with this approach. It is assumed that dual-earner couples formulate adaptive strategies for maximizing both spouses' ability to meet workplace and family needs (Moen & Wethington, 1992), and that when workers are able to realize their strategies, they experience compatibility and low distress. We focus on schedule fit because a key aspect of such strategies is the number, distribution, and flexibility of each partner's

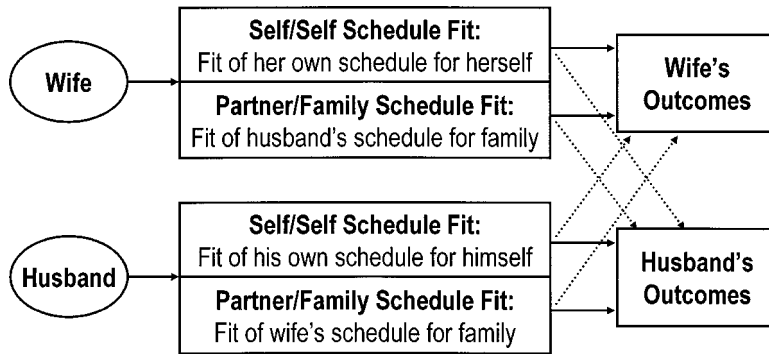
work hours, although we recognize that fit could also be assessed with respect to such dimensions as energy, strain, and behaviors (MacDermid et al., 2000).

We operationalize schedule fit as respondents' subjective assessment of the degree to which their own and their spouses' work arrangements meet their needs and those of their spouses and other dependents (Barnett, Gareis, & Brennan, 1999), reflecting the fact that schedule fit is evaluated in light of the needs of all family members. We distinguish between two aspects of schedule fit: the fit of one's own work schedule for oneself (self/self schedule fit) and the fit of one's spouse's work schedule for oneself and other family members (partner/family schedule fit). Although we also have data on self/family schedule fit, we choose to use spouse ratings of partner/family schedule fit instead (see *Measures* for further details). It is expected that one's own and one's spouse's ratings of self/self and partner/family schedule fit will be associated with outcomes such as job-role quality, marital-role quality, and psychological distress.

In the present sample of dual-earner couples, the wives are physicians who have voluntarily reduced their work hours to better manage work and family demands, whereas their husbands work full-time schedules. This sample is of interest for several reasons. First, dual-earner couples are becoming more common: Between 1970 and 1993, dual-earner couples increased from 39% to 61% of all married couples (Blau, Ferber, & Winkler, 1998). Further, in such couples, women are more likely than are men to adapt their work schedules to meet family needs (see Spain & Bianchi, 1996, for a review), as have the wives in our sample. Finally, Carr (2002) argues that women who have invested heavily in their education and careers, as have the physicians in this sample, will be more distressed if they cut back on their paid employment to meet family responsibilities than will less career-oriented women, because such labor market reductions may conflict with their expectations for achieving occupational success.

Several recent studies have examined the effects on individuals of adjusting work schedules to accommodate family needs. Findings have been somewhat mixed. For example, in a sample of dual-earner families with both child-care and elder-care responsibilities, Brockwood, Hammer, Neal, and Colton (2002) found that for wives, making work accommodations such as schedule changes was associated with greater family satisfaction, but also with lower job satisfaction; thus,

FIGURE 1. INDIVIDUAL AND CROSSOVER EFFECTS OF SPOUSES' RATINGS OF WORK SCHEDULE FIT



work accommodations seemed to represent a tradeoff for these women. Milkie and Peltola (1999) found that for married, employed men and women, the total number of work sacrifices made for family reasons was negatively related to sense of work-family balance. It is difficult to interpret this finding, however, because the authors defined work sacrifices as including not only refusing a promotion, refusing overtime, and cutting hours, but also as taking on *more* paid work for family reasons, a strategy much more common among men in their sample. Carr (2002) studied the effects of work adjustments made to meet child-rearing needs—including stopping work, cutting back on work, and changing jobs—on evaluations of work opportunities and self-acceptance in men and women from different birth cohorts. She found that work adjustments did affect outcomes depending on gender and cohort, but significant effects were associated with stopping work rather than with a variable combining cutting back on work (as wives in the present sample did) and changing jobs.

None of the studies described above examined the effects of work schedule adjustments at the couple level, analyzing husband and wife outcomes jointly and allowing for crossover effects from one spouse to the other. The present study is responsive to Carr's (2002) suggestions that future research should explore couple-level as well as individual-level work-family strategies and examine additional occupational and marital outcomes.

We test the six hypotheses described below. For each pair of hypotheses, the first predicts an individual effect in which that spouse's own schedule fit ratings predict that spouse's own outcomes (see Figure 1, solid lines), and the second

predicts a crossover effect in which one spouse's schedule fit ratings predict the other spouse's outcomes (see Figure 1, dotted lines).

1. a. Job-role quality will be predicted by own ratings of self/self schedule fit for both husbands and wives. That is, to the extent that one feels that one's own work schedule fits one's own needs, one's own job-role quality will also be positive.
 - b. Job-role quality will be predicted by spouse ratings of partner/family schedule fit in a crossover effect for both husbands and wives. That is, to the extent that one's spouse feels that one's own work schedule fits family needs, one's own job-role quality will also be positive.
2. a. Marital-role quality will be predicted by own ratings of self/self schedule fit and own ratings of partner/family schedule fit for both husbands and wives. That is, to the extent that one feels that one's own work schedule fits one's own needs and that one's partner's work schedule fits family needs, one's own marital-role quality will also be positive.
 - b. Marital-role quality will be predicted by spouse ratings of partner/family schedule fit and spouse ratings of self/self schedule fit in crossover effects for both husbands and wives. That is, to the extent that one's spouse feels that one's own work schedule fits family needs and that the spouse's own work schedule fits the spouse's needs, one's own marital-role quality will also be positive.
3. a. Psychological distress will be predicted by own ratings of self/self and partner/family

schedule fit for both husbands and wives. That is, to the extent that one feels that one's own work schedule fits one's own needs and that one's partner's work schedule fits family needs, one's own distress will be low.

- b. Psychological distress will be predicted by spouse's ratings of self/self and partner/family schedule fit in crossover effects for both husbands and wives. That is, to the extent that one's spouse feels that the spouse's work schedule fits the spouse's needs and that one's own work schedule fits family needs, one's own psychological distress will be low.

In all analyses, we control for known correlates of job-role quality, marital-role quality, and psychological distress, including both spouses' negative affectivity and the couple's income, marriage length, and number of children. We control for each spouse's negative affectivity, a mood-dispositional trait to view the world negatively that is thought to account for spuriously high correlations between self-report measures of predictors and outcomes, especially in cross-sectional analyses (Brennan & Barnett, 1998; Burke, Brief, & George, 1993). Because reduced hours are usually only an option for those workers whose partners earn enough money to offset the consequent reduced income, and because income has been linked to a number of physical and psychological well-being outcomes, we also control for household income.

Length of marriage and number of children have been related to marital-role quality, and number of children might also affect schedule fit because parents of more children might have more difficulty achieving good schedule fit. Therefore, we control for length of marriage and number of children. Finally, because this is a study of work schedules, we include both spouses' work hours as additional predictors.

METHOD

Sample

As part of a larger study of the anticipated and unanticipated consequences of reduced-hours work on physicians, their spouses, and their employers (e.g., Barnett et al., 1999), we interviewed 105 female, Boston-area physicians who reported voluntarily working reduced-hours schedules and their full-time-employed husbands. Reduced

hours was defined as working a schedule that the physician considered to be reduced for at least the preceding 3 months. The women had adjusted their work schedules in order to better manage their work and family demands, as demonstrated by their responses to a 16-item measure of their reasons for reducing their work hours, which was based on content analyses of preliminary open-ended interviews with 24 reduced-hours physicians and their spouses. By far the most common reason for reducing work hours, endorsed as at least somewhat important by 97.0% of the present sample, was "need for more time with my children." No other reason was endorsed by more than 66.7% of respondents, although a plurality of respondents endorsed two items about wanting to spend more time with their spouses, two items about needing more personal time, one item about needing to reduce work-related pressure, and one item about not wanting to work traditional full-time physicians' hours.

The majority (92.4%) of the reduced-hours physicians were White, as were their husbands (97.1%); on average, they were 41.4 years of age ($SD = 5.4$), whereas their husbands were 42.9 ($SD = 6.7$). On the average, reduced-hours physicians had been working their current reduced schedules for about 4 years ($M = 47.4$ months, $SD = 45.0$), whereas their husbands had been working their schedules for almost 7 years ($M = 80.6$ months, $SD = 64.3$). On average, the reduced-hours physicians worked 29.2 hours per week ($Mdn = 30$, $SD = 8.4$), although it should be noted that the women's reduced-hours schedules ranged up to 50 hours per week. In contrast, their husbands averaged 52.2 hours per week ($Mdn = 50$, $SD = 9.9$), ranging up to 75 hours per week. Although the wives voluntarily reduced their hours, only 53.3% reported working their preferred number of hours; 39.0% reported working more and 7.6% reporting working fewer than they would prefer. Among the husbands, only 39.0% reported working their preferred number of hours, with 57.1% reporting working more and 3.8% reporting working fewer than they would prefer.

The majority of the reduced-hours physicians (62.1%) were married to other physicians. On average, the couples had been married 12.4 years ($SD = 6.5$). Of the men, 84.8% were in their first marriage, as were 91.4% of the women. The vast majority of the couples (96.2%) were parents; of those, the average number of children was 2.3 ($SD = 0.9$), and the average age of the children was

8.2 years ($SD = 6.4$). The median yearly household income was \$200,000, although the range was broad ($SD = \$120,426$).

We used several strategies to develop the sample, including random sampling from the registry of the Massachusetts Board of Certification in Medicine; requesting nominations from respondents; and contacting area HMOs, hospitals, and practice partnerships to ask for assistance in recruitment. Our response rates (35.5% among randomly sampled respondents and 43.0% among nominated respondents) compare favorably with those achieved in other studies of physicians (Parsons, Warnecke, Czaja, Barnsley, & Kaluzny, 1994; Sobal et al., 1990), especially in light of the fact that both the reduced-hours physicians and their husbands had to agree to participate.

Procedures

Each respondent participated in a private, face-to-face, 60-minute quantitative survey. Respondents also completed a 20-minute mailed survey to be returned at the time of the interview. The interview and survey together comprised about 558 items covering respondents' work arrangements; social-role quality (as spouse, employee, and parent); and quality of life.

Measures

Schedule fit was assessed using two subscales derived from a 9-item scale designed to measure subjective appraisals of the degree to which both spouses' work arrangements, in terms of number and distribution of work hours, meet their own needs and those of other family members (Barnett et al., 1999). Exploratory factor analysis results showed that scale items loaded onto three factors representing the fit of one's own schedule for oneself (self/self schedule fit), the fit of one's own schedule for other family members (self/family schedule fit), and the fit of one's spouse's schedule for other family members (partner/family schedule fit).

Because we have ratings from both members of each couple, one spouse's ratings of self/family schedule fit are conceptually redundant with the other spouse's rating of partner/family schedule fit. In other words, we have ratings of how the wife's schedule works for family members from both the wife (self/family schedule fit) and the husband (partner/family schedule fit); in an analogous fashion, we have two sources for how the

husband's schedule works for other family members. These ratings showed only low to moderate correlations between partners, with a correlation coefficient of 0.44 ($p = .000$) between husband and wife ratings of how the husband's schedule works for family members, and a correlation coefficient of 0.25 ($p = .010$) between husband and wife ratings of how the wife's schedule works for family members. We judged that the partner/family schedule fit rating was less biased because it comes from one of the affected parties; that is, a family member rates how the partner's schedule fits family needs.

The self/self schedule fit subscale consists of four items such as "Taking into account your current work hours and schedule, how well is your work arrangement working for you?" The partner/family schedule fit subscale consists of three items such as "Taking into account your spouse's current work hours and schedule, how well is your arrangement working for your child(ren)?" Internal consistency for self/self schedule fit and partner/family schedule fit are good, with Cronbach's $\alpha = .87$ and $.78$, respectively.

Overall, the reduced-hours physicians reported fairly good self/self schedule fit, with an average rating of 5.4 ($SD = 1.1$, range = 2.5–7.0) on a scale from 1 to 7, corresponding to a point between *slightly well* and *mostly well*. Their husbands gave similar ratings of self/self schedule fit, with an average rating of 5.3 ($SD = 1.2$, range = 1.0–7.0). In contrast, the reduced-hours physicians rated partner/family schedule fit lower, with an average rating of 4.7 ($SD = 1.3$, range = 2.0–7.0). This was significantly lower, $t(201.7) = 2.94$, $p = .004$, than their husbands' ratings of partner/family schedule fit, which averaged 5.2 ($SD = 1.1$, range = 2.7–7.0). It is not surprising that the husbands rate the schedules of their reduced-hours wives more positively than the reduced-hours wives rate the schedules of their full-time-employed husbands.

Job-role quality was assessed with a modified version of a 28-item measure on which respondents were instructed to rate on a scale ranging from 1 (*not at all*) to 4 (*considerably*) the extent to which each item was rewarding or of concern (Barnett & Brennan, 1995, 1997). Items covered job conditions in the areas of skill discretion, decision authority, job demands, pay adequacy, job security, and supervisor relations; three original scale items on schedule control were omitted from score computation in the present analysis to avoid inflating the relationship between schedule fit and

job-role quality. Concerns were negatively weighted and rewards positively weighted in constructing the score, which was the weighted average of item scores (Barnett et al., 1993). Internal consistency is good, with Cronbach's $\alpha = .77$ for rewards and $.81$ for concerns in the present sample. Job-role quality was fairly high in this sample, averaging 1.2 ($SD = 0.7$) on a scale ranging from -3.0 to $+3.0$.

Marital-role quality was measured using a 15-item brief form (Hyde & Plant, 1996) of the Marital-role Quality Scale (Barnett et al., 1993). As with job-role quality, respondents indicated on a 4-point scale the degree to which each item was rewarding or of concern. Internal consistency is very good, with Cronbach's $\alpha = .87$ for rewards and $.89$ for concerns in the present sample. Marital-role quality was high in this sample, averaging 2.0 ($SD = 1.0$) on a scale ranging from -3.0 to $+3.0$.

Psychological distress was assessed by asking respondents to indicate on a 5-point scale from 0 (*not at all*) to 4 (*extremely*) how often in the past week they were bothered by each of 10 symptoms of anxiety and 14 symptoms of depression (Derogatis, 1975). Anxiety and depression scores were combined to create a measure of psychological distress (Barnett et al., 1993). The combined score has very good internal consistency, with Cronbach's $\alpha = .91$ in the present sample. Psychological distress was low in this sample, averaging 11.0 ($SD = 9.7$) on a scale ranging from 0 to 96.

Work hours was assessed by asking respondents to estimate the number of hours worked in an average work week, excluding on-call hours.

Household income per capita was calculated by summing each spouse's report of own income and then dividing by the number of people in the household. The distribution of this variable is skewed, so we used the natural log of per capita income in the analyses.

Number of children at home and *number of years married* are self-explanatory.

Negative affectivity was assessed with the 10-item Trait Anxiety Scale (Spielberger, 1983), on which respondents indicated on a 4-point scale from 1 (*almost never*) to 4 (*almost always*) how characteristic the traits were of them. Test-retest correlations ranged from $.73$ to $.86$ in college populations over a 2-year period (Spielberger) and was $.77$ over a 1-year period in a sample of full-time employed, dual-earner couples (Barnett et al., 1995). Internal consistency is very good, with Cronbach's $\alpha = .83$ and $.85$ (Brennan & Barnett,

1998) and $.88$ in the present sample. Negative affectivity was fairly low in this sample, averaging 20.6 ($SD = 5.8$) on a scale ranging from 10 to 40.

Analytic Approach

Analyzing data from married couples requires a technique that takes into account the shared variance of outcomes. In the past decade, several methods have been proposed for handling such data (Bray, 1995; Bray, Maxwell, & Cole, 1995; Maguire, 1999). The use of HLM is a flexible technique that takes into account the interdependence of the observations (Barnett et al., 1993; Brennan, Barnett, & Gareis, 2001; Windle & Dumenci, 1997). Because it is possible that outcomes within a social system may be predicted not just by one's own experiences, but also by the experiences of another member of the system (in this case, the spouse), it is also critical that the analytic technique be able to model crossover relationships; HLM is readily able to accommodate the modeling of one couple member's outcomes as a function of the spouse's experiences (Barnett & Brennan, 1998; Raudenbush et al., 1995).

Earlier approaches to the modeling of couples provided no method for testing whether a given effect was greater or smaller for one member of the couple, because available tests for the differences in regression coefficients and their analogues required the unsupportable assumption of independent observations; in other words, that quality-of-life outcomes such as marital-role quality or psychological distress are uncorrelated in marital pairs. By modeling the outcomes for both members of the couple simultaneously in a single model, HLM allows for tests of the difference between effects without bias or mis-specification (Raudenbush & Bryk, 2002; Raudenbush, Bryk, Cheong, & Congdon, 2000).

In this analysis, we expand upon the original adaptation of HLM proposed by Barnett et al. (1993) for the analysis of data from married couples. Although the original model is in a strict sense multivariate with respect to outcomes (Raudenbush et al., 1995), this fact is often overlooked (e.g., Maguire, 1999) because both of the outcomes are of the same construct (e.g., psychological distress), albeit displayed as separate equations for the two couple members. Because it is already multivariate, the original hierarchical model for the analysis of data from dyads, in which the outcomes specific to each member of a

couple are estimated simultaneously in a single model, is easily expanded to accommodate multiple outcomes per respondent (Brennan, Kim, et al., 2001; Supovitz & Brennan, 1997), also in a single model. In particular, the multivariate outcome model was adapted to the study of married couples with multiple outcomes for each member of the couple by Ozer et al. (1998), who modeled marital-role quality and psychological distress for each member of a couple as latent outcomes in a single model estimated as an HLM.

In the present analysis, we expand the model to estimate simultaneously in one model six outcomes (husband's and wife's job-role quality, marital-role quality, and psychological distress). This single-model approach takes into account both the interrelatedness of the outcomes across members of the couples as well as the within-individual correlations across the three measures. We retained the use of parallel scales to estimate latent *true score* outcomes for all three of the outcome measures.

We specified a priori a model (Model 4) in which the effects of number of children, household income, marriage length, and both spouses' negative affectivity were controlled, as were the effects of both spouses' work hours. Although this was the only model of theoretical interest, in order to deal with likely effects of multiple collinearity, particularly as might affect the simultaneous inclusion of both work hours and schedule fit, we estimated models in a progressive and logical order to ascertain that the addition of the theoretically relevant variables to the model did, in fact, incrementally improve model fit. For the preliminary models (Models 1–3), the coefficients for the predictors, their *t*-statistics, and the associated *p*-values were not considered.

Our modeling strategy began by estimating a single *null model* (Model 1) that contained only the six outcomes described above. This model yielded baseline variance estimates of the total true score variation in each of the outcomes; these were used in evaluating the additional proportion of variance explained in each step. Specifically, as predictors are added to the model, we expect unexplained variance to decline; the difference in variance between the two models becomes the numerator in determining the proportion of variance explained by the model, and the denominator is the total variance from the null model. Although there are six variances associated with each of the six outcomes in our model, as compared with one in a traditional regression model, the interpretation

of explained variance (the difference in the unexplained variance in a model with more predictors subtracted from the unexplained variance in a model with no predictors) over the original unexplained variance has an interpretation entirely analogous to an R^2 statistic; that is, the proportion of variance explained by the model.

The next model (Model 2) added the control variables (i.e., the number of children, household income, marriage length, and each spouse's negative affectivity). As control variables, these would have been retained in subsequent models regardless of the results of the hypothesis testing, because we were interested in interpreting the effects of schedule fit net of the effect of these control variables.

We added to the resulting model the number of hours worked by each member of the couple to predict both their own and their partners' outcomes (Model 3). As a conservative test of the role of schedule fit, we retained the work hours predictors regardless of the results of hypothesis testing.

Finally, a single model estimating all six outcomes predicted by the control variables, the number of hours worked by each spouse, and husbands' and wives' assessments of two aspects of schedule fit was estimated (Model 4). Hypothesis testing was used to determine whether including schedule fit incrementally improved the fit of the model.

RESULTS

Model Estimation

Testing of the deviance statistic for the null (Model 1) and control (Model 2) models revealed that adding control variables improved the fit of the model ($\chi^2 = 141.98$, $df = 24$, $p = .000$). Further, the control model explained variance in all three outcomes, most notably psychological distress, where approximately half the variance is explained by the control variables. The large reduction in the unexplained variance of psychological distress when the control variables are added can be accounted for by the addition of negative affectivity to the model. (See Brennan & Barnett, 1998, for a discussion of the role of negative affectivity in predicting psychological distress.)

Model 3 added hours worked to the control model. The deviance test suggests that the null hypothesis—no difference in the fit of the two models—should not be rejected ($\chi^2 = 15.30$, df

TABLE 1. REGRESSION COEFFICIENTS ESTIMATION FOR JOB-ROLE QUALITY

Predictor	Job-Role Quality			
	Wives		Husbands	
	Unstandardized Coefficient	(SE)	Unstandardized Coefficient	(SE)
Intercept	50.2037	(.7601)	49.4690	(.7131)
Self/self schedule fit	3.1877*	(1.3743)	3.8974***	(.7006)
Partner/family schedule fit	-.8170	(.8027)	.8220	(.8061)
Spouse self/self schedule fit	.8084	(.6403)	.0889	(1.0023)
Spouse partner/family schedule fit	1.5396	(.9823)	.3171	(.6724)
Work hours	.1033	(.0927)	.0079	(.0815)
Spouse work hours	-.2008*	(.0942)	.0643	(.0862)
Household income	-.8873	(4.5404)	10.1427**	(3.7673)
Years married	-.0478	(.1277)	-.2295	(.1400)
Number of children	.9851	(1.1879)	-.0014	(.9112)
Negative affectivity	-.4342**	(.1566)	-.1456	(.1487)
Unexplained variance				
Comparison model (Model 3)		62.00		64.78
Explanatory model (Model 4)		47.89		41.17
Additional variance explained (%)		14.1		23.6

Note: $N = 105$ couples. For the explanatory model (Model 4), estimated parameters = 88 and deviance statistic = 7,634.21.

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

= 12, $p = .225$). In other words, the addition of hours worked does not improve the fit of the model. The reduction in unexplained variation associated with the addition of hours worked to the control model is generally small, although the unexplained variance in the husband's marital-role quality was reduced by about 4.9% when both husbands' and wives' work hours were added to the model.

Finally, a single model adding own and spouse ratings of self/self and partner/family schedule fit as predictors of each of the six simultaneous outcomes was estimated (Model 4). In this instance, we reject the null hypothesis ($\chi^2 = 90.42$, $df = 24$, $p = .000$) of no improvement in model fit as compared with Model 3 containing hours worked. The addition of the schedule fit variables was associated with an across-the-board decrease in unexplained variance as compared with the model containing only the control variables and work hours, ranging from a very small reduction in the unexplained variance of wives' psychological distress (about 1.6%) to a considerably larger decrease in unexplained variance of husband's job-role quality (about 23.6%). Hence, we select the full model (control variables, hours worked, and schedule fit), Model 4, as the tested model that best fits the data.

After fitting the models discussed above and accepting Model 4 as our explanatory model, we

conducted several post hoc analyses to ensure that certain findings, especially the finding that number of hours worked cannot be associated within standard accepted levels of statistical confidence with quality-of-life outcomes, were not the product of multiple collinearity of predictor variables. Adding work hours to the null model (Model 1), the control model (Model 2), and a model containing the control variables plus schedule fit did not significantly improve model fit in any case. In contrast, adding schedule fit to the null model (Model 1), the control model (Model 2), and a model containing the control variables plus work hours (Model 3) significantly improved model fit in every case. These findings suggest that number of hours worked is not associated with quality-of-life outcomes, and that this lack of association is not due to multiple collinearity of predictor variables.

Hypothesis Testing

Job-role quality. As shown in Table 1, Hypothesis 1a was supported. That is, for women and men alike, assessments of how well their work schedules were meeting their own needs predicted job-role quality, with better self/self schedule fit predicting higher job-role quality. There was no gender difference in the magnitude of the association between self/self schedule fit and job-role quality ($\chi^2 = 0.379$, $p > .500$). Hypothesis 1b was

TABLE 2. REGRESSION COEFFICIENTS ESTIMATION FOR MARITAL-ROLE QUALITY

Predictor	Marital-Role Quality			
	Wives		Husbands	
	Unstandardized Coefficient	(SE)	Unstandardized Coefficient	(SE)
Intercept	49.8811	(.8323)	49.6709	(.8947)
Self/self schedule fit	-.1598	(1.1057)	-1.3831	(.9277)
Partner/family schedule fit	2.2443*	(.9412)	2.0569†	(1.0415)
Spouse self/self schedule fit	-2.7928**	(.8936)	.9435	(1.2447)
Spouse partner/family schedule fit	1.8729†	(1.0263)	-.0329	(.9549)
Work hours	.0578	(.0827)	.1615	(.1172)
Spouse work hours	.0049	(.1087)	-.0027	(.0950)
Household income	-12.3301*	(5.7530)	-8.2069	(6.2301)
Years married	.1883	(.1634)	-.2401	(.2048)
Number of children	-.5493	(1.1486)	-2.3367†	(1.2532)
Negative affectivity	-.5180**	(.1913)	-.5854***	(.1336)
Unexplained variance				
Comparison model (Model 3)		70.58		76.66
Explanatory model (Model 4)		59.05		69.49
Additional variance explained (%)		11.5		7.2

Note: *N* = 105 couples. For the explanatory model (Model 4), estimated parameters = 88 and deviance statistic = 7,634.21.

†*p* < .10. **p* < .05. ***p* < .01. ****p* < .001.

not supported. As shown in Table 1, spouse ratings of partner/family schedule fit did not predict job-role quality for men or for women.

Although only one of the job-role quality hypotheses was supported, the various components of schedule fit together constitute a powerful explanatory construct. As shown at the bottom of Table 1, adding own and spouse self/self and partner/family schedule fit to the model explained an additional 14.1% of the variance in job-role quality for women and 23.6% of the variance in job-role quality for men over and above the variance explained by the controls plus work hours.

Interestingly, work hours did not predict job-role quality for women or for men, either with or without the schedule fit variables in the model. There was, however, a significant crossover effect among the reduced-hours physicians; specifically, the more hours her husband worked, the poorer her own job-role quality.

Marital-role quality. As shown in Table 2, Hypothesis 2a was partially supported. Among the women, assessments of how well their partner's work schedule was meeting family needs predicted marital-role quality, with better partner/family schedule fit predicting higher marital-role quality. There was a similar trend (*p* = .051) among the men. Although this effect was significant for women and marginal for men, there was no gen-

der difference in the magnitude of the association between partner/family schedule fit and marital-role quality ($\chi^2 = 0.022, p > .500$).

Hypothesis 2b concerning crossover effects was partially supported. Among the women, there was a trend (*p* = .071) for a crossover effect such that the better her husband's assessment of how well her (reduced-hours) work schedule met family needs, the higher her marital-role quality. Although this trend was only seen among the wives, the magnitude of the association between spouse's partner/family schedule fit rating and own marital-role quality was not significantly different by gender ($\chi^2 = 2.331, p = .123$).

There was also a significant crossover effect among the women, although the direction was opposite to that predicted; specifically, the better her husband's assessment of how well his (full-time) work schedule met his own needs, the poorer her marital-role quality. There was no parallel finding among the husbands, and this gender difference was statistically significant ($\chi^2 = 8.613, p = .004$).

As shown in Table 2, the components of schedule fit explained an additional 11.5% of the variance in marital-role quality for women and 7.2% of the variance in marital-role quality for men over and above the variance explained by the controls plus work hours.

TABLE 3. REGRESSION COEFFICIENTS ESTIMATION FOR PSYCHOLOGICAL DISTRESS

Predictor	Psychological Distress			
	Wives		Husbands	
	Unstandardized Coefficient	(SE)	Unstandardized Coefficient	(SE)
Intercept	49.5677	(.7761)	50.7316	(.6772)
Self/self schedule fit	-.5857	(.9121)	-.6017	(.7753)
Partner/family schedule fit	-.2502	(.6601)	1.5800*	(.6810)
Spouse self/self schedule fit	.2949	(.7959)	-1.9936**	(.7428)
Spouse partner/family schedule fit	-1.0751	(1.0010)	-.2847	(.7174)
Work hours	-.2157†	(.1148)	.2991	(.0690)
Spouse work hours	.1342	(.1058)	-.1736†	(.0960)
Household income	-.1102	(5.0061)	-10.1933*	(4.0839)
Years married	-.0430	(.1636)	.1887	(.1171)
Number of children	-.8542	(1.1279)	-.8053	(.7905)
Negative affectivity	1.0070***	(.2300)	.9280***	(.1982)
Unexplained variance				
Comparison model (Model 3)		51.89		41.44
Explanatory model (Model 4)		50.28		36.33
Additional variance explained (%)		1.6		5.1

Note: $N = 105$ couples. For the explanatory model (Model 4), estimated parameters = 88 and deviance statistic = 7,634.21.

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

Psychological distress. As shown in Table 3, Hypothesis 3a was not supported. Among the women, there was no effect of partner/family schedule fit on psychological distress, and among the men, the finding was in the opposite direction to that predicted. Specifically, husbands' own ratings of partner/family schedule fit predicted psychological distress. Hypothesis 3b was supported among the husbands, but not among the wives. The wives' ratings of self/self schedule fit were negatively related to psychological distress among their husbands, as predicted. Thus husbands' psychological distress was higher when their wives rated their own (reduced-hours) work schedule as fitting their own needs poorly, but also when they themselves rated their wives' (reduced-hours) work schedule as fitting family needs well. There were no parallel findings among the wives, and there was a trend for a gender difference in the magnitude of the association between own partner/family schedule fit and own distress ($\chi^2 = 2.846$, $p = .088$) and a significant gender difference in the magnitude of the association between spouse ratings of self/self schedule fit and own distress ($\chi^2 = 4.170$, $p = .039$).

As shown in Table 3, there were also two marginally significant findings that are consistent with the findings above. There were trends for both husbands ($p = .074$) and wives ($p = .063$) to report lower psychological distress when she

worked more hours. The table also shows that the components of schedule fit explained an additional 1.6% of the variance in psychological distress for women and an additional 5.1% of the variance in distress for men over and above the variance explained by the controls plus work hours. In the case of the distress outcome in particular, it seems likely that negative affectivity may be suppressing some of the effects. The correlation between negative affectivity and distress is 0.646 ($p = .000$), as contrasted with correlations of -0.311 ($p = .000$) and -0.307 ($p = .000$) between negative affectivity and job-role quality and between negative affectivity and marital-role quality, respectively. Thus negative affectivity and distress share 41.7% of their variance, as opposed to a shared variance of only 9.6% between negative affectivity and job-role quality and between negative affectivity and marital-role quality.

DISCUSSION

The main findings of this study of 105 women Boston-area reduced-hours physicians and their full-time-employed husbands are that self/self schedule fit predicted higher job-role quality for men and for women alike; that partner/family schedule fit predicted higher marital-role quality for women, with a similar trend among men; that spouse's rating of partner/family schedule fit

showed a trend to predict higher marital-role quality in a crossover effect among women; that spouse's self/self schedule fit predicted lower marital-role quality in a crossover effect among women; that partner/family schedule fit predicted higher psychological distress among men; and that spouse's self/self schedule fit predicted lower psychological distress in a crossover effect among men.

Because half of the sample—the reduced-hours physicians—had a restricted range of work hours, all respondents were married, and most had children, the present analysis is a conservative test. Employees who work more hours would probably experience poorer schedule fit and worse outcomes, whereas unmarried and/or childless employees might have fewer nonwork commitments and therefore experience better fit and outcomes. There was still sufficient variability in the sample for an adequate test of the hypotheses, however, given that the women worked as many as 50 hours per week and the men as many as 75 hours per week. Further, with regard to the psychological distress findings, given the degree of overlap that exists between negative affectivity and distress, the effects that we did find must have been robust indeed in order to overcome the possible suppressing effect of negative affectivity.

The finding that self/self schedule fit predicts higher job-role quality among both men and women is consistent with the results of previous research on schedule fit (Barnett et al., 1999) and extends those findings to employees who work longer hours than those in the original 1999 sample. In contrast, objective work characteristics such as work hours per se do not predict job-role quality, even among the men, whose work hours were not restricted in the way that their wives' work hours were. The fact that long work hours do not appear to be associated with poor job-role quality suggests that reduced-hours schedules per se are not a panacea to the problem of professionals' dissatisfaction with long work hours (Boston Bar Association Task Force on Professional Challenges and Family Needs, 1999; Jacobs & Gerson, 1997). Instead, a more productive strategy for addressing the time pressures of today's professionals may be to attempt to maximize their self/self schedule fit, whether they work full-time or reduced hours.

The findings that partner/family schedule fit predicts marital-role quality among women, with a similar trend among men, and that partner/family schedule fit predicts psychological distress

among men highlight the importance of acknowledging that each family member's social-role experiences affect, and are in turn affected by, other family members' social-role experiences. There is also an interesting trend, at least among the women, to rate their own marital-role quality higher when their husbands assessed their work schedules as fitting family needs well. This finding, along with the crossover effects found in the present study, further illustrates the interdependence of husbands' and wives' experiences.

Some of our unexpected findings probably result from the specific composition of the present sample, in which all of the wives were physicians who had reduced their work schedules, whereas their husbands, the majority of whom were also physicians, continued to work full-time. Thus, these women had traded off time at work in exchange for more family time, whereas their husbands had not. Given the prevailing culture in the medical profession of long hours and total commitment to work, such a tradeoff may be experienced as a career sacrifice, and one which may involve actual penalties in terms of salary and advancement. In this context, it is easier to understand why husbands' satisfaction with their full-time schedules might be negatively related to wives' marital-role quality. We do have some evidence that a sizable number of the wives perceived their reduced-hours schedules as a career sacrifice. Some 39.1% reported that having to forgo some aspects of their work that they valued in exchange for their reduced schedule was of considerable or extreme concern to them, and 31.4% reported the same level of concern about being less advanced professionally than others with whom they had trained.

It could also be argued that in addition to the wives sacrificing work time in exchange for more family time, their husbands are sacrificing family time in exchange for more work time, and that to the extent that the husband's unhappiness with his schedule is an indicator that he perceives his heavy work schedule to be a sacrifice, his wife reports higher marital-role quality. The interpretation that husbands are making a sacrifice is supported by the fact that more husbands than wives reported working too many hours (57.1% vs. 39.0%, respectively, as previously discussed in the *Sample* section). It does not appear to be the case, however, that the husbands are working more hours in order to allow their wives to work fewer hours. First, as reported in the *Sample* section, the husbands had been working their schedules for 3

years longer, on average, than their wives had, suggesting that the husbands' work schedules did not change at the time that their wives reduced their own work hours. Second, the majority of the husbands in the present sample were also physicians, and their work schedules are typical of those of other full-time physicians, rather than representing increased hours. In any case, future research should examine in greater detail the relative sacrifices of husbands and wives in dual-earner couples with one member working reduced hours.

Other results suggest that the men in the present sample did appear to be sensitive to their wives' experiences, as evidenced by their high psychological distress when their wives were unhappy with their reduced-hours schedules. The men's seemingly paradoxical distress when they themselves believed that their wives' work schedules were meeting family needs may also reflect an awareness that their wives may be paying a career price in order to spend more time taking care of family. These results are compatible with the trends for both husbands and wives to report lower psychological distress when the wife is working longer hours, as if both are happier when she makes a smaller adjustment to her work schedule.

The findings discussed above are consistent with the findings of Brockwood et al. (2002) that work adjustments can have negative as well as positive effects on women, and with Carr's (2002) argument that career-invested women may pay a price when they trade off work for family. Our findings extend Carr's argument by suggesting that there may be negative effects for these women's husbands as well. Poor outcomes may be especially likely in the context of an asymmetrical arrangement in which only one spouse and not the other makes a work adjustment to meet family needs. According to equity theory (Walster, Walster, & Berscheid, 1978), both members of such couples might experience poor outcomes, because inequitable relationships are distressing for the overadvantaged as well as for the underadvantaged partner.

Although different populations might show different patterns of relationships between schedule fit and outcomes, we expect that the findings linking self/self schedule fit to job-role quality would generalize to other employed populations and that the findings linking partner/family schedule fit to marital-role quality would generalize to other married populations in which at least one spouse

is employed. We argue that even the unexpected findings discussed above might generalize to any dual-professional couple in which one member, whether it be the wife or the husband, has made a temporary or permanent work adjustment to meet family needs. Dual-professional couples are becoming increasingly common as women continue to achieve high-level positions in the professions; therefore, it is important to further delineate the positive and negative effects on professionals of making such work adjustments. Further research should also address the question of whether these effects are gender-specific, or whether they would apply equally to men and to women who accommodate their work to their family needs.

In addition to the generalizability issues, another limitation to this study is that the data are cross-sectional. It would be useful to collect longitudinal data, starting before any work adjustments are made and continuing until the employee reverses the adjustment (e.g., goes back to a full-time schedule), if applicable. Such data could illuminate questions such as whether outcomes depend on how the initial decision was made, on the duration of the adjustment, on whether one or both partners make adjustments, on the perceived career costs of the adjustment, and so on.

Another topic for further research is additional delineation of the ways in which various aspects of work schedules mesh with particular family needs. An ongoing project involves the assessment of a new measure of subjective experience of work schedule that includes specific rewards and concerns about the effects of different work schedules on oneself and on other family members; these rewards and concerns were identified in open-ended interviews with women who were day- and evening-shift nurses and their husbands.

Despite the limitations discussed above, the present study makes several contributions. First, our findings highlight the value of subjective indicators of work experiences such as schedule fit. This study provides additional evidence of the utility of the schedule fit construct in predicting outcomes, as well as further delineating the components of the schedule fit measure into self/self and partner/family aspects of schedule fit. Our findings also further illuminate the tradeoffs that may be involved when people make adjustments to their work schedules in order to better manage work and family demands. In addition, by fully exploiting the couple nature of our data and by accommodating the inherent relatedness of the experiences of couple members, we are able to dem-

onstrate the interdependence of spouses' work-family experiences. This interdependence reinforces the importance of treating the couple as the unit of analysis in future work-family research. In sum, the present study contributes to understanding the larger ecology of work and family life by shedding light on some of the specific linkages between dual-earner husbands' and wives' work and family experiences.

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