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# Wives' Shift Work Schedules and Husbands' and Wives' Well-Being in Dual-Earner Couples With Children

## A Within-Couple Analysis

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In a sample of 55 dual-earner families with children aged 8 to 14 in which the mothers are registered nurses regularly working either day shifts (typically 7:00 a.m. to 3:00 p.m.) or evening shifts (typically 3:00 p.m. to 11:00 p.m.), we estimated the within-couple relationship between the wife's work variables (i.e., work shift, work hours, and the interaction between work shift and work hours) and each spouse's work-family conflict, psychological distress, and marital-role quality. Wives' work variables predicted their own work-family conflict and psychological distress and showed a trend to predict their husbands' work-family conflict.

**Keywords:** *shift work; within-couple analysis; work-family conflict; psychological distress; marital-role quality*

**I**ncreasing numbers of U.S. employees are working shift schedules, and many of these workers are married and have children (Presser, 2003). Yet we know almost nothing about the within-couple linkages between wives'

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shift schedules and husbands' and wives' work–family conflict, psychological distress, and marital-role quality in dual-earner shift-working couples with school-age children. Although some authors (e.g., Heymann, 2000; Presser, 2000) have suggested that there are unique strains on families in which married mothers with children work evenings, Presser's (2000) findings indicate that it is only among night and rotating shift workers, both female and male, that there is elevated risk of marital disruption. Although she acknowledged that shift schedules vary in their typical start and end times and in the number of hours worked per week, Presser estimated only the effect of the shift (i.e., day, evening, night, and rotating) while controlling for the number of hours worked. It is possible that her results might have been different had she estimated the joint effect of the shift schedule and the number of hours that the mother worked per week. In the present within-couple analysis, we estimated the interaction effects of the wife's shift schedule *and* number of hours worked per week on three outcomes for each spouse: work–family conflict, psychological distress (i.e., symptoms of anxiety and depression), and marital-role quality.

Previous research with the sample in the present analysis (Barnett & Gareis, 2007)—that is, married women in dual-earner couples who regularly work either day or evening shifts and who have children aged 8 to 14—indicates that mothers spend equal numbers of hours directly interacting with their children regardless of their work shift schedule. In addition, their children's perceptions of their mothers' parenting skills, the frequency of their spontaneous disclosures to their mothers, and their ratings of their mothers' parental knowledge did not vary by their mothers' shift schedules. In other words, there is no evidence that mothers who work days versus evenings shortchange their children. Can the same be said for the mothers' own well-being (i.e., work–family conflict and psychological distress) and for the quality of the parents' marital relationship? Also, are there crossover effects such that the wife's work arrangement affects her husband's outcomes? Although we collected data on the number of hours the fathers worked and include those data in our analyses, the primary focus of this report is on the joint effect of the wife's work shift and work hours on both spouses' well-being.

We address these questions in a sample of 55 families in which the mothers are registered nurses who work at least 28 hours per week and who regularly work either the day shift (typically 7:00 a.m. to 3:00 p.m.;  $n = 29$ ) or the evening shift (typically 3:00 p.m. to 11:00 p.m.;  $n = 26$ ), the fathers are employed (approximately two thirds working 9:00 a.m. to 5:00 p.m. or day shifts), and they have at least one child who is at least 8 years old but

has not yet started high school. Moreover, the mothers had to have been working their particular shift for at least 1 year prior to being interviewed. We selected mothers who worked these two shifts and not night or rotating shifts because previous research suggests that evening-shift work is the hardest schedule for mothers with preadolescent and adolescent children and day-shift work is the easiest (Heymann, 2000). Moreover, families in which the mother works days more closely resemble "typical" families in which parents and children do things together, including socializing and recreation (Presser, 2003). In contrast, in families in which the mother works evenings, children spend more time with each parent (including the father) separately rather than doing things as a family. Therefore, when mothers work days, both parents incur fewer violations of gendered expectations and potentially fewer stressful adjustments than families in which the mothers work evenings. Thus, these two groups present the greatest contrast with respect to the potential strains on the individual spouses and on their marital relationship. The data reported in this article were collected as part of a broader study in which data were collected separately from the mothers, fathers, and all children in the target age range. For the present report, however, we include only the data from the parents.

The decision to sample families with schoolchildren in this age range was based primarily on our need to collect closed-ended survey data from the children on their own behaviors and on their perceptions of their mother's and father's parenting behaviors. Therefore, the children had to be old enough to understand the questions and to provide reliable data.

It is important to note that registered nurses are atypical shift workers. In contrast to most of their counterparts in other employment sectors, nurses have more control over their work schedules. Whereas most shift workers work shifts because their jobs require them to do so (Bogen & Cherlin, 2004; Presser, 2003), registered nurses can often choose their own schedules. In addition, nurses have the option of working in non-24/7 environments if they cannot obtain their preferred shift or if the burden of shift work becomes too great. Most other shift workers do not have such flexibility. Furthermore, registered nurses have a publicly available registry, allowing us efficiently to draw a sample of shift workers while holding occupation constant.

## Literature Review

Among workers in the United States and increasingly in other countries, nonstandard schedules are normative (Presser, 2003; Strazdins, Korda, Lim,

Broom, & D'Souza, 2004). In the United States, an astonishing 70% of employees work other than standard hours (i.e., other than 35 to 40 hours per week on weekdays during the daytime; Presser, 2003). Moreover, future job growth in the United States is projected to be disproportionately high in such occupations as cashiers, truck drivers, commodities sales workers in retail and personal services, and waiters and waitresses, all occupations in which shift work is common (Presser, 2003). Because many of these jobs are dominated by female employees, this anticipated job growth will disproportionately involve more women (Presser, 2003). In addition to service sector occupations, shift work is normative among transportation, security, manufacturing, call center, and health care workers, especially nurses working in hospitals or other 24-hour settings. (Although increasingly normative, shift schedules and weekend work are often referred to in the literature as "nonstandard," and following this practice, we occasionally also refer to shift schedules as nonstandard.)

Moreover, fewer than half of couples in the United States—45.7% of all dual-earner couples and 48.1% of full-time dual-earner couples—are "traditional" dual-earner couples in which both spouses work standard hours on weekdays only (Presser, 2003). Among all dual-earner couples, the prevalence of nonstandard schedules is high for both those with children and those without children (Presser, 2003). Roughly 30% of all dual-earner couples include at least one spouse who works other than a fixed day schedule. In addition, the younger the age of spouses, the lower their education, and the larger the number of children, the higher the percentage working nonstandard schedules. In 27% of married couples, the wife is full-time employed on a nonstandard schedule and the couple has at least one child under 14 (Presser, 2003, p. 70). Thus, there is a reasonable probability that employees working standard schedules will be married to spouses working nonstandard shifts and that they may experience negative outcomes not as a result of their own work schedules, but as a result of their spouses' work schedules.

Presser (2003) suggests that in the absence of children, shift-working couples can cope with whatever stress such schedules generate. But when couples have children, shift work schedules complicate family life considerably, increasing the risk of such negative outcomes as work-family conflict (see also Staines & Pleck, 1983). There is growing consensus that parents' daily work experiences have an impact on family functioning (e.g., Crouter, Bumpus, Maguire, & McHale, 1999; Parcel & Menaghan, 1994; Repetti, 1989, 1994). Consistent with both Bronfenbrenner's ecological theory and with family-systems theory (see Cox & Paley, 1997, for a review) and the notion of spillover, stressful job conditions have been associated with such

negative outcomes for the family as more frequent marital conflict (Bolger, DeLongis, Kessler, & Wethington, 1989; Schulz, Cowan, Cowan, & Brennan, 2004). Building on Bronfenbrenner's observation that "In ecological research, the principal main effects are likely to be interactions" (1979, p. 38), we hypothesize that the combination of mothers' evening shift schedules and long work hours may be one such stressful job condition.

Families in which the mother regularly works evening shifts compared to day shifts face many special challenges. For example, the family as a whole is not typically together during dinner, nor are they all together for afternoon or evening social events such as school performances that occur on workdays (Staines & Pleck, 1984). In addition, many husbands in these families assume primary responsibility for preparing dinner for their children as well as themselves and for supervising homework for school-age children. If their children are young, fathers will also supervise their bedtime preparations. Some men may find these activities especially stressful or undesirable, increasing the likelihood of negative outcomes. Being away from the family during after-school and traditional "family" times is thought to be stressful for mothers, especially those mothers who work long hours; that is, the more time away from the family during these hours, the more conflict and distress mothers will experience.

Finally, full appreciation of the effects of wives' shift schedules on outcomes requires the acknowledgment that most employees function within dyads. In other words, to fully understand the effects of shift work, outcomes need to be assessed for both the employee and the spouse, and outcomes should be analyzed within couples. Our focus on the couple as the unit of analysis builds on a rich empirical literature reflecting the reality that the lives of partners in couples are linked; what happens to one member of a dyad affects the other member (e.g., Barnett, Marshall, Raudenbush, & Brennan, 1993; Chesley & Moen, 2006). The use of couple data also permits analyses of within-couple crossover effects (e.g., her work hours may affect his outcomes and vice versa). In the first systematic longitudinal analysis of the separate effects of work hours and income on physical health, Stolzenberg (2001) found that within couples, the monetary benefits of husbands' employment affected wives' health over a 3-year period, whereas the nonmonetary aspects of wives' employment affected husbands' health over the same period. For example, husbands whose wives worked 40 or more hours per week reported poorer health than those whose wives worked fewer hours. In contrast, wives' health was more closely related to the monetary aspects of their husbands' work hours. These findings also underscore the importance of controlling for household income in

estimating the effect of work variables (e.g., shift schedule and work hours) on outcomes.

## Work–Family Conflict

Previous research with the present sample indicates that for some outcomes, non–day shifts may be associated with positive effects on family life. For example, when mothers regularly work evenings versus days, fathers “act like mothers” in their degree of involvement with and knowledge about their children (Barnett & Gareis, 2007), and there is no significant difference between mothers and fathers in these families with respect to the number of hours per week they each spend directly involved with their children. In contrast, when mothers work days, the couple more closely resembles a traditional family in which the mother is more engaged with the children than is the father. These findings are consistent with Presser’s (2003) research showing that when wives work non–day compared to day shifts, husbands spend more time on housework and child care.

In contrast to these generally positive effects on children, there is reason to suspect that when wives work evenings, there are temporal strains that affect family life that may be reflected in heightened work–family conflict in both spouses. For example, Staines and Pleck (1983) found that shift-working couples reported more work–family conflict, often linked to scheduling problems. More recently, La Valle and her colleagues (La Valle, Arthur, Millward, Scott, & Clayden, 2002), using a nationally representative sample of British parents of children up to 14 years old, found that all types of nonstandard work schedules can disrupt family life, resulting in heightened work–family conflict.

When one spouse works evenings, the spouses typically are not together for evening social events that occur on those workdays. More important, when wives work evenings, families are often unable to eat their meals together (Presser, 2003). With respect to shared meal time, the general pattern in families with mothers who work evenings is the decreased frequency with which both parents have breakfast or dinner with their children. In contrast, when mothers work days and fathers work 9:00 a.m. to 5:00 p.m., they may not share a family meal at breakfast, but they more typically do share their evening meal, a time when many families reconnect and provide support to one another. Overall, the family’s ability to eat together is “an especially important day-to-day ritual” that may be disrupted in families with shift-working parents (Presser, 2003, p. 16; see also Hertz & Charlton, 1989).

The division of household labor in shift-working families has received considerable empirical scrutiny. Unsurprisingly, being home alone—particularly during the day—appears to be an important factor increasing a spouse's share of traditionally female household tasks, for both husbands and wives (Presser, 2003; Staines & Pleck, 1983). In general, the division of household labor in shift-working families appears to have an asymmetric effect on stereotypically gendered behavior. The more hours husbands are not at work while wives are at work, the more likely husbands are to do housework that is traditionally done by women, thereby violating gender stereotypes. The same conclusion was drawn in a recent Australian study of shift-working nurses. One researcher coined the phrase “the power of absence” (Moorehead, 2003) to mean that shift work enables some women to be absent from the home in the late afternoon and early evening, during peak periods of domestic work. Husbands and fathers are often therefore required to take up a much larger than usual domestic workload (Probert, 2005). In contrast, when wives are not at work and husbands are, wives tend to spend more hours on traditionally female tasks, thereby reinforcing gender stereotypes (Barnett & Shen, 1997). Presser (2003) reported similar findings in her study of shift workers: “The more hours the husband was *not* employed while the wife *was* employed [particularly during the day], the more the husband's share of household tasks increased” (Presser, 2003, p. 122). As a result of early socialization and cultural pressures toward conformity with traditional gendered household roles, wives' work–family conflict may not necessarily decrease, and may even increase, as the gender division of household labor becomes more nontraditional. Thus, the joint effect of wives' evening work and long work hours will be associated with their own and their husbands' heightened work–family conflict.

*Hypothesis 1:* Women who regularly work evening shifts, particularly if they work long hours, will experience more work–family conflict than their counterparts who work fewer hours or who work day shifts.

*Hypothesis 2:* Men whose wives work evening shifts, particularly if their wives work long hours, will experience more work–family conflict than their counterparts whose wives work fewer hours or whose wives work day shifts.

## Psychological Distress

Several previous studies indicate that the absolute number of hours women work is unrelated to their psychological distress (Barnett & Gareis, 2000) or even negatively related to psychological distress (Baruch, Barnett, & Rivers, 1985). However, no previous studies have addressed the relationship between maternal shift work and psychological distress. Yet mothers who work evenings,

especially those who work long hours, compared to their counterparts who work short hours or who work days, may experience symptoms of psychological distress because they are unable to be home at dinnertime or to engage with their children during the after-school hours. Even knowing that their children are being cared for by their husbands, they may feel that they themselves should be there to help them with their homework, accompany them to after-school activities, be there when they play with their friends, and get them ready for bed. It follows that their psychological distress would be greater the more hours they spend on the evening shift.

Alternatively, in couples who have chosen to have the mother work an evening schedule in order to maximize parental child care, mothers may view family disruptions as a minor price to pay and may therefore not be adversely affected by working nonstandard schedules (Thompson & Bunderson, 2001). Indeed, it may be that mothers who work evening shifts are relieved to know that their children are being cared for by their fathers and may therefore experience low psychological distress, perhaps especially when they have to work long hours. Previous research lends indirect support to this speculation. Specifically, in one study, "schedule fit," defined as the degree to which one's work arrangements meet one's own and one's family's needs, mediated the relationship between work hours and burnout (Barnett, Gareis, & Brennan, 1999). Specifically, long work hours alone did not predict burnout; instead, the relationship between hours worked and burnout depended on the extent to which the work schedule met family needs.

It is important to note that the couples in the present study have had at least 1 year to work out the child care and other issues raised by the wife's evening work schedule and for the wives to develop trust in their husbands' ability to care for the children. On balance, we predict that mothers who work the evening shift, even if they work long hours, will not differ in their experience of psychological distress from mothers who work the day shift.

Speculatively, we predict that men whose wives work the evening shift will not report higher psychological distress, even if their wives work long hours, than men whose wives work the day shift. Previous research indicates that fathers whose wives work evenings enjoy more rewarding relationships with their children than do fathers whose wives work days (Barnett & Gareis, 2007), and they participate actively with their wives in making the decision to have her work her particular schedule. Furthermore, it has been shown in a larger dual-earner sample that when husbands' relative contribution to child care increases, their psychological distress may actually decrease whereas wives' distress tends to stay the same (Ozer, Barnett, Brennan, & Sperling, 1998).

*Hypothesis 3:* Women who regularly work evening shifts will not report higher psychological distress, even when they work long hours, than their counterparts who regularly work day shifts.

*Hypothesis 4:* Men whose wives regularly work evening shifts will not report higher psychological distress, even when their wives work long hours, than their counterparts whose wives regularly work day shifts.

Note that these two hypotheses are stated in the positive. Failure to reject them should not be viewed as the same thing as supporting them. Given the low statistical power of this sample, failure to reject these hypotheses should be viewed only as tentative evidence of support.

### **Marital-Role Quality**

The overall pattern among dual-earner couples with children is one of greater marital dissatisfaction when either the husband or the wife works a non-day shift compared with their both working day shifts (Deutsch, 1999; Grosswald, 2004; Han, 2004; Jacobs & Gerson, 2004; Presser, 2000, 2003; White & Keith, 1990). In Presser's (2003) exhaustive study of the quality and stability of marriage in dual-earner couples working nonstandard shifts, she found some indication that the greater risk of marital instability was especially marked among night-shift and rotating-shift workers and did not apply to evening employment for either spouse, regardless of whether the couple had children. However, Presser notes that it is difficult to generalize her findings because the results varied with the specific measure of marital instability and with the specific shift schedule. It is important to note that for most of the couples in Presser's analyses, non-standard-shift workers had little opportunity to change their work schedules. No previous study has estimated these relationships in a sample of shift workers who may be more easily able to change their shift schedules or their jobs if their marriages are suffering. Previous research suggests that women may reduce their work hours when their family relationships are troubled (Barnett & Gareis, 2002); they may also change their shift for the same reason.

Findings from a previous within-couple longitudinal analysis of the relationship between work hours and marital-role quality were that none of the time-invariant (i.e., stable) work hours variables was significantly associated with marital-role quality. In contrast, change over time in work hours did relate to change over time in marital-role quality (Barnett, Gareis, & Brennan, 2006). One implication of these findings may be that couples adapt to each others' typical work hours, whatever they may be, with no significant effect on their evaluations of the quality of their marriages.

However, change over time in work hours seems to require adjustments, with associated effects on marital-role quality.

*Hypothesis 5:* Women who regularly work evening shifts will not report lower marital-role quality, even when they work long hours, than their counterparts who regularly work day shifts.

*Hypothesis 6:* Men whose wives regularly work evening shifts will not report lower marital-role quality, even when they work long hours, than their counterparts whose wives regularly work day shifts.

Again, these two hypotheses are stated in the positive. However, given the relatively low statistical power of this sample, failure to reject these hypotheses should not be viewed as the same thing as supporting them but instead should be viewed only as tentative evidence of support.

## Covariates

These hypotheses are tested after controlling for the following covariates: husband's work hours, years of marriage, number of children in the home, household income, negative affectivity, and percentage of the wife's work hours that are "in shift." The number of hours husbands work will affect the degree to which they can assume child care and household tasks and might therefore affect their own and their wives' work-family conflict, psychological distress, and marital-role quality, especially in families in which the mothers regularly work evening shifts. Years of marriage, number of children in the home, and household income have been related to marital-role quality (Barnett, Brennan, Raudenbush, & Marshall, 1994; Presser, 2003). Negative affectivity is a mood-dispositional trait to experience the world negatively. As such, negative affectivity has the potential to bias the estimation of the relationships among predictors and outcomes, thereby increasing the likelihood of spurious findings. A considerable literature suggests that including negative affectivity as a covariate reduces such spurious correlations, especially when all variables are assessed by self-report indicators, including some related in one way or another to affect, as is the case in the present analysis (Brennan & Barnett, 1998; Burke, Brief, & George, 1993; Noor, 1997). Finally, to compare day-shift versus evening-shift nurses, we have to control for the fact that most nurses' schedules are not pure. That is, frequently, some percentage of their work hours frequently falls either in the preceding or subsequent shift, or they work two or more different shifts each week. Evening-shift nurses are especially likely to have such mixed schedules. Thus, we control for the percentage of wives' work hours that are in her primary shift.

## Method

### Participants

We conducted quantitative interviews with 55 Boston-area dual-earner families with children in which the mother was a registered nurse who regularly worked either day shifts (29 families), which typically extend from approximately 7:00 a.m. to 3:00 p.m., or evening shifts (26 families), which typically extend from approximately 3:00 p.m. to 11:00 p.m. It should be noted that although the prototypical shift is 8 hours, the nurses in this sample worked a variety of shift lengths ranging from 4 to 12 hours in length. To be eligible, the nurse had to work at least 28 hours per week in a 24-hour setting (e.g., hospital, nursing home, rehabilitation facility) and to have been working the same schedule for at least 1 year, the father had to be employed full-time, and they had to have primary custody of at least one child who was at least 8 years old but had not yet started high school. As part of a larger study, all mothers, fathers, and children in the target age range were interviewed. For this article, however, we report only on the data from the mothers and fathers ( $N = 110$  individual parents).

Most (94.5%) of the families were White; the rest (5.5%) were Asian. Parents' ranged from 32 to 56 years of age ( $M = 42.7$  years of age for mothers; 44.0 years of age for fathers). On average, couples had been married for 15.2 years ( $SD = 4.8$  years) and had between two and three children ( $M = 2.5$ ,  $SD = 0.7$ , range = 1 to 4 children). Mothers worked 35.2 hours per week on average ( $SD = 7.3$  hours per week), ranging up to 52.5 hours per week, and fathers worked 45.2 hours per week on average ( $SD = 7.5$  hours per week), ranging up to 77.0 hours per week. Both the day-shift and evening-shift wives were working primarily weekday schedules. Specifically, 41.8% of the sample did not work any weekend shifts at all. In the sample as a whole, on average, only 13.9% of the wives' shifts (11.3% for day-shift wives; 16.8% for evening-shift wives) fell on weekends.

### Procedures

The sample was drawn randomly from the registry of the Board of Certification in Nursing, which licenses all nurses practicing in the Commonwealth of Massachusetts. Potential participants first received letters describing the study and the eligibility criteria; screeners followed up with a telephone call to determine whether the family was eligible and whether all eligible family members were willing to participate in the study.

As with other studies that rely on public registries to develop their random samples, it is very difficult to determine a response rate. Many people we contacted refused to give us any demographic information, so we were not able to determine how many who did not respond were actually eligible to participate, nor do registries provide information on such variables as work schedule, marital status, and number and ages of children.

Data were collected during the school year between December 2002 and February 2004. Trained interviewers arranged face-to-face quantitative interviews with eligible family members at a time and place convenient to the participants. Most family interviews were conducted during a single visit to the family's home, where each eligible family member was interviewed privately. During the child interviews, there was at least one parent present at the interview location but out of hearing. Interviews took approximately 45 minutes for the mothers, 35 minutes for the fathers, and 15 minutes for each child.

In addition, mothers and fathers received a brief mailed questionnaire about each participating child to be completed in advance and returned at the time of the interview. The mothers' questionnaire took approximately 20 minutes per child to complete, and the fathers' questionnaire took approximately 5 minutes per child to complete. The interviews and surveys covered objective and subjective aspects of parents' jobs and work schedules and a variety of socioemotional outcomes for the parents and the children. Each family received \$100 for their participation, plus \$25 for each additional child beyond the first who participated.

## Measures

Work-family conflict was assessed using eight items (see the appendix) selected from a scale developed by MacDermid et al. (2000). Participants rated the frequency with which they experienced the energy, strain, and behavioral components of work interfering with family and of family interfering with work on a scale ranging from 1 (*rarely*) to 4 (*most of the time*), along with two more global items assessing the overall severity of work interfering with family and of family interfering with work on a scale ranging from 1 (*minimal*) to 4 (*very considerable*). Internal consistency is acceptable, with Cronbach's  $\alpha$ s of .80 for husbands and .67 for wives in the present sample.

Psychological distress was assessed using a state measure asking participants to indicate on a scale ranging 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 excellent internal consistency, with Cronbach's  $\alpha$ s of .92 for husbands and .87 for wives in the present sample.

Marital-role quality was measured using a 15-item brief form (Hyde & Plant, 1996) of the Marital-Role Quality scale (Barnett et al., 1993), on which participants 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. Internal consistency is excellent, with Cronbach's  $\alpha$ s of .88 for husbands and .94 for wives in the present sample.

Wife's work shift was coded as a dichotomous variable (0 = *regularly works day shifts*, 1 = *regularly works evening shifts*). Each spouse filled out a grid showing the times he or she starts and ends work at all jobs on each day of a 7-day week. For those whose work schedule changes from week to week, the spouse filled out as many additional weekly grids as required to fully describe his or her work schedule. Information from these grids was used to calculate average weekly work hours for both wives and husbands. For the wives, the percentage of her work hours that fell into her typical shift (day or evening) was also computed.

The remaining covariates were assessed as follows: Respondents reported on both number of children at home and years of marriage. Per capita household income was calculated by averaging each spouse's report of household income and then dividing by the total 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. Negative affectivity was assessed using a trait measure asking respondents to fill out the 10-item Trait Anxiety Scale (Spielberger, 1983), using a scale ranging from 1 (*almost never*) to 4 (*almost always*) to indicate how characteristic the traits are of them. Internal consistency is very good, with Cronbach's  $\alpha$ s of .88 for husbands and .82 for wives in the present sample.

## Analytic Overview

To address the challenge of analyzing data where outcomes (e.g., psychological distress) are known to be correlated within couples, Barnett et al. (1993) used hierarchical linear modeling (HLM), a technique originally developed for the analysis of data from individuals in social groupings, such as classrooms. In the present analysis, we model simultaneously three outcomes for each member of the couple: work-family conflict, psychological distress, and marital-role quality. Thus, the statistical model features a total of six outcomes for each couple (see Ozer et al., 1998, for a similar analysis).

Although the original model (Barnett et al., 1993) did not demonstrate the use of crossover effects in which a predictor associated with one spouse predicted an outcome for the other spouse, this possibility is inherent in the model and later demonstrated in Raudenbush, Brennan, and Barnett (1995) and is used in this report. Another feature of the original model (Barnett et al., 1993) is that the items making up each of the outcome variables are divided into two parallel scales for each outcome, thus creating a "latent true score" for each of the outcomes, such that all correlations among these variables, both across constructs and across spouses, are estimated free of measurement error, and the relationships to predictor variables are estimated free from measurement error in the outcomes (but not in the predictors, which are not modeled as latent).

The explanatory model included the following predictors: wife's work shift, wife's work hours, an interaction term that was the cross-product of the wife's work hours with her work shift, husband's work hours, percentage of the wife's work hours that fell into her regular work shift, own negative affectivity, logged per capita household income, number of children at home, and years of marriage. All predictor variables in the model are centered, and all components of interaction terms were centered before computing the cross-product.

We used multivariate general linear hypothesis testing (Raudenbush & Bryk, 2002; Raudenbush, Bryk, Cheong, & Congdon, 2004) to test for gender differences in the effects of predictors on outcomes. Our a priori hypotheses specify an interaction of work shift and work hours. Because the interaction term is collinear with its components, it is possible that relationships that might actually exist in the data would be masked by non-significant individual *t* tests of the components. Therefore, we included all three terms in the model and used general linear hypothesis tests to examine the joint effect of the two main effects and the interaction between wife's work hours and wife's work shift taken together on each of the outcomes for each spouse.

## Results

Table 1 shows descriptive statistics for all model variables for wives and for husbands. Table 2 shows the true score adjusted intercorrelations for all six latent outcome variables as estimated by the HLM. Tables 3 through 5 show the unstandardized regression coefficients and standard errors for the predictors of each of the three outcomes for wives and for husbands. For the sake of clarity, each table shows the findings for only one of the outcomes.

**Table 1**  
**Descriptive Statistics for All Model Variables for Wives**  
**and for Husbands**

	Day		Evening	
	Wives	Husbands	Wives	Husbands
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
Work hours	36.7 (7.9)	44.8 (6.3)	33.5 (6.3)	45.7 (8.8)
Wife's percentage of hours in shift	84.7% (10.6%)		66.6% (28.0%)	
Household income	\$133,649.9 (\$51,769.4)		\$113,538.4 (\$25,405.1)	
Number of children at home	2.2 (0.5)		2.5 (0.8)	
Years of marriage	15.5 (4.6)		14.9 (5.1)	
Negative affectivity	1.62 (0.43)	1.57 (0.53)	1.50 (0.34)	1.59 (0.36)
Work-family conflict	1.50 (0.32)	1.50 (0.44)	1.63 (0.37)	1.53 (0.46)
Distress	11.72 (8.98)	11.52 (10.68)	10.96 (8.58)	11.81 (10.16)
Marital-role quality	1.40 (1.34)	1.36 (0.99)	1.80 (1.00)	1.77 (0.98)

Note: *N* = 55 couples. For negative affectivity and work-family conflict, scores can range from 1 to 4. For psychological distress, scores can range from 0 to 96. For marital-role quality, scores can range from -3 to +3.

**Table 2**  
**True Score Adjusted Intercorrelations Among Outcomes as**  
**Estimated by Hierarchical Linear Modeling**

	1	2	3	4	5	6
1. Husband's work-family conflict	—					
2. Wife's work-family conflict	.14	—				
3. Husband's distress	.61	-.01	—			
4. Wife's distress	-.01	.51	-.16	—		
5. Husband's marital-role quality	-.29	-.26	-.53	-.20	—	
6. Wife's marital-role quality	-.27	-.33	-.40	-.28	.48	—

Note: *N* = 55 couples.

However, as discussed above, the explanatory HLM included all three outcomes for both spouses simultaneously. Thus, the results for each outcome are net of the effect of the other two outcomes, including any direct effects of that predictor on one of the latent outcomes as well as any indirect effect it might have through another of the latent outcomes acting as a mediator.

**Table 3**  
**Regression Coefficients Estimates (Hierarchical Linear Modeling)**  
**for Work–Family Conflict**

Work–Family Conflict	Wives		Husbands	
	Coefficient	SE	Coefficient	SE
Intercept	47.23	1.52	50.33	1.56
Wife's work shift	5.86*	2.50	-0.69	2.57
Wife's work hours	0.19	0.16	0.22	0.17
Wife's work shift by work hours	-0.46	0.32	0.60 <sup>†</sup>	0.34
Husband's work hours	-0.15	0.13	-0.22	0.14
Wife's percentage of hours in shift	-0.02	0.06	-0.00	0.06
Own negative affectivity	10.42***	2.43	6.72**	2.27
Logged per capita household income	-4.09	7.85	-7.25	8.25
Number of children at home	-3.32 <sup>†</sup>	1.89	4.09*	1.96
Years of marriage	-0.02	0.21	-0.34	0.21

Note:  $N = 55$  couples. For wife's work shift, 0 = *day* ( $n = 29$ ), 1 = *evening* ( $n = 26$ ).

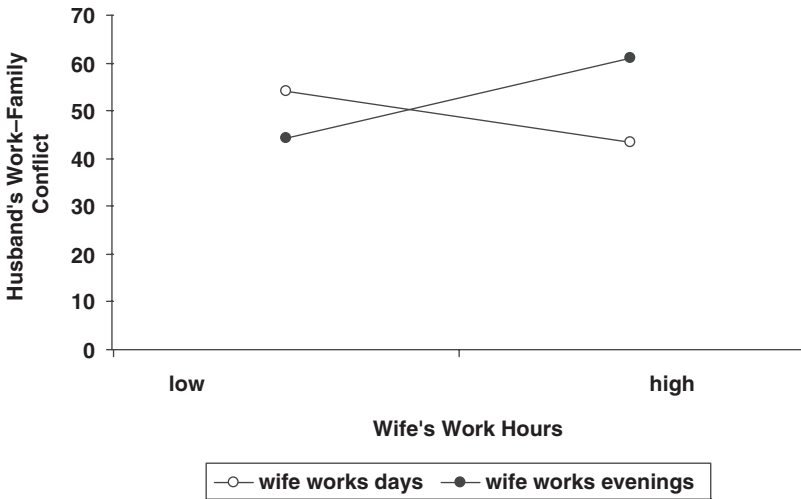
<sup>†</sup> $p < .10$ . \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

## Work–Family Conflict

The results for work–family conflict are shown in Table 3. Considered as a group (as described in the Analytic Overview), wife's work shift, wife's work hours, and the interaction between the two are significantly associated with wives' work–family conflict ( $\chi^2 = 9.77$ ,  $p = .020$ ) but not with husbands' work–family conflict ( $\chi^2 = 4.29$ ,  $p = .230$ ). More specifically, among wives, there is a significant main effect of her work shift on her perceptions of work–family conflict, with women who regularly work evening shifts reporting higher levels of work–family conflict than their day-shift counterparts. The finding that evening shifts are associated with greater work–family conflict among the wives partially supports Hypothesis 1. However, the interaction term viewed separately is not significant, failing to support the prediction that the relationship between evening shifts and high work–family conflict would be even stronger among those women who work longer hours.

On the other hand, for husbands, wives' work shift has no main effect, offering no support for the first part of Hypothesis 2. There is a significant gender difference in the association between wife's work shift and each spouse's work–family conflict ( $\chi^2 = 4.05$ ,  $p = .041$ ). However, there is a trend for a crossover effect in which the interaction between the wife's work

**Figure 1**  
**Moderating Effect of Wife’s Work Shift on the Relationship Between**  
**Wife’s Work Hours and Husband’s Work–Family Conflict**



shift and the wife’s work hours predicts the husband’s perceptions of work–family conflict (see Figure 1). This finding should be interpreted with caution because it is only marginally significant, but the figure shows that for husbands of day-shift-working wives, there is a trend for him to perceive *lower* levels of work–family conflict when his wife works longer hours. In contrast, for husbands of evening-shift-working wives, there is a trend for him to perceive *higher* levels of work–family conflict when his wife works longer hours. This offers support, if weak, for the second part of Hypothesis 2. Although the interaction term is only marginally significant, there is a significant gender difference in the association between the interaction term and each spouse’s work–family conflict ( $\chi^2 = 6.30, p = .012$ ).

**Psychological Distress**

Considered as a group, wife’s work shift, wife’s work hours, and the interaction between the two are significantly associated with wives’ psychological distress ( $\chi^2 = 12.72, p = .006$ ) but not with husbands’ psychological

**Table 4**  
**Regression Coefficients Estimates (Hierarchical Linear**  
**Modeling) for Psychological Distress**

Psychological Distress	Wives		Husbands	
	Coefficient	SE	Coefficient	SE
Intercept	50.25	1.31	50.14	1.17
Wife's work shift	-0.53	2.17	-0.31	1.92
Wife's work hours	-0.15	0.14	-0.12	0.13
Wife's work shift by work hours	-0.99**	0.28	0.22	0.25
Husband's work hours	-0.31*	0.12	-0.20 <sup>†</sup>	0.10
Wife's percentage of hours in shift	-0.10*	0.05	0.01	0.05
Own negative affectivity	14.06***	2.09	15.31***	1.58
Logged per capita household income	-6.90	6.81	10.89 <sup>†</sup>	6.17
Number of children at home	-3.56*	1.64	3.86*	1.47
Years of marriage	0.47*	0.18	-0.11	0.16

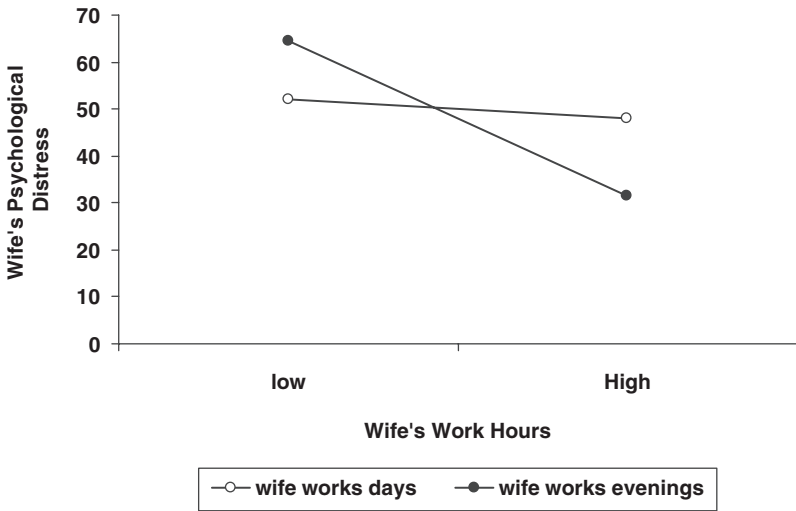
Note:  $N = 55$  couples. For wife's work shift, 0 = *day* ( $n = 29$ ), 1 = *evening* ( $n = 26$ ).

<sup>†</sup> $p < .10$ . \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

distress ( $\chi^2 = 2.46$ ,  $p > .500$ ). Hypothesis 3 predicted that wives who regularly worked evening shifts would not show higher levels of psychological distress and that this would be true even of those women who worked longer hours. As shown in Table 4, this hypothesis was fully supported. There is no main effect of a wife's work shift on her psychological distress, and the effect of the interaction term is in the opposite direction. Specifically, as shown in Figure 2, for women who regularly work day shifts, there is essentially no relationship between her work hours and her psychological distress, whereas for women who regularly work evening shifts, the longer her work hours, the *lower* her levels of psychological distress. We do not see a corresponding effect for men, and, in fact, there is a significant gender difference in the association between the interaction term and each spouse's psychological distress ( $\chi^2 = 8.95$ ,  $p = .003$ ). Nor is there a main effect of the wife's work shift on the husband's psychological distress. Taken together, these two findings are fully supportive of Hypothesis 4.

There are also main effects for both day-shift and evening-shift women of the percentage of her hours that fall into her regular work shift, with purer schedules predicting lower levels of psychological distress, and of husbands' work hours, with longer hours worked by husbands associated with *lower* levels of psychological distress in their wives. For husbands, on

**Figure 2**  
**Moderating Effect of Wife's Work Shift on the Relationship Between**  
**Wife's Work Hours and Wife's Psychological Distress**



the other hand, the only work hours variable that has an effect is his own work hours, which shows a trend to be inversely associated with his psychological distress. Thus, the direction of the relationship between husbands' work hours and psychological distress is the same for both husbands and wives.

### Marital-Role Quality

The results for marital-role quality are shown in Table 5. Considered as a group, wife's work shift, wife's work hours, and the interaction between the two were not significantly associated with wives' marital-role quality ( $\chi^2 = 0.33, p > .500$ ) nor with husbands' marital-role quality ( $\chi^2 = 1.52, p > .500$ ). Furthermore, for wives and husbands alike, there are no effects of any of the work hours or work shift variables on marital-role quality, tending support to Hypotheses 5 and 6.

Finally, we conducted latent variable regression analyses to determine whether marital-role quality and work-family conflict act as mediators of

**Table 5**  
**Regression Coefficients Estimates (Hierarchical Linear Modeling) for Marital-Role Quality**

Marital-Role Quality	Wives		Husbands	
	Coefficient	SE	Coefficient	SE
Intercept	50.19	1.73	48.79	1.84
Wife's work shift	-0.41	2.86	2.55	3.02
Wife's work hours	-0.07	0.19	-0.10	0.20
Wife's work shift by work hours	0.10	0.37	-0.17	0.39
Husband's work hours	0.07	0.15	0.16	0.16
Wife's percentage of hours in shift	-0.09	0.07	-0.05	0.07
Own negative affectivity	-10.66***	2.63	-4.91 <sup>†</sup>	2.57
Logged per capita household income	1.72	8.99	5.28	9.69
Number of children at home	2.67	2.16	1.78	2.30
Years of marriage	0.25	0.23	0.07	0.25

Note:  $N = 55$  couples. For wife's work shift, 0 = *day* ( $n = 29$ ), 1 = *evening* ( $n = 26$ ).

<sup>†</sup> $p < .10$ . \*\*\* $p < .001$ .

the relationship linking wife's work shift, wife's work hours, and the interaction between wife's work shift and wife's work hours to either spouse's psychological distress. Previous research suggests that mediation may be occurring even in cases where there is no apparent relationship between a predictor and an outcome. For example, in a study of dual-earner couples, there was no net significant effect of husbands' relative time in child care on wives' distress (Ozer et al., 1998). However, mediation analyses revealed that there were in fact two counterbalancing mediation effects such that husbands' increased time in child care was related simultaneously to wives' increased distress (as she spent correspondingly less time in child care) and to wives' increased marital-role quality (which was in turn associated with her decreased distress). However, in the present study, the results of these analyses show no evidence of mediation.

## Discussion and Conclusions

The main finding of this study of a random sample of 55 married couples in which the wife is a registered nurse who regularly works either the day or the evening shift and has worked that shift for at least 1 year, the

husband is employed full-time, and they have a least one child 8-14 years of age is that the statistically significant associations depended on the particular outcome and on the gender of the spouse.

Women who regularly work evening shifts, regardless of the number of hours they work, report significantly higher work-family conflict than women who regularly work days. It appears that even after working the evening shift for at least a year, mothers of school-age children continue to report higher work-family conflict than their counterparts who work days, although one has to assume that if the level of work-family conflict were too high, mothers would have changed their schedules or left their positions. Thus, even among this select group of registered nurses who have regularly worked the evening shift for a year or more, it may be that there is still a price to pay for not being with their families in the evenings, albeit not a catastrophic or pervasive one.

Not surprisingly, men whose wives regularly worked evenings showed a trend to report more work-family conflict than men whose wives regularly worked days, but only if their wives worked long hours as well as working evenings. Although this crossover effect was only a trend, it was in the predicted direction. With respect to work-family conflict, it appears that regardless of how many hours they work, it is hard for women who work evening shifts to adapt to being away from their families during the after-school hours. It is important to note, however, that this finding is limited to work-family conflict and is not reflected in the women's distress or marital-role quality, as discussed below. In contrast, it might be the case that men whose wives work evenings may pay little price in terms of work-family conflict for assuming nontraditional household and child care tasks, unless their wives work long hours in the evenings.

With respect to psychological distress, there was no significant difference between wives who regularly worked day versus evening shifts. However, there was a significant interaction effect such that the longer the hours the wives worked during the evening shift, but not during the day shift, the *lower* was their psychological distress. Perhaps these wives trust that their children are being well cared for by their husbands and can therefore work long hours without experiencing high levels of distress. Alternatively, it may be that they feel free to work long hours because they have confidence in their husbands' parenting skills.

Again, it is noteworthy that the joint effect of wives' shift and number of work hours was not significantly related to the husbands' level of distress. Previous research both with this sample and with other samples tells us that the more time fathers are alone with their children, the more they report

feeling competent as a parent (Baruch & Barnett, 1986; Barnett & Gareis, 2007). Such feelings of competence may, in turn, be associated with lower feelings of distress (Ozer et al., 1998).

There were no significant differences in marital-role quality between wives who worked day shifts compared to evening shifts, even when number of work hours was taken into consideration. In addition, men's evaluation of the quality of their marriages was unrelated to their wives' work shift, work hours, or interaction between work shift and work hours. These findings are consistent with Presser's (2003) conclusion that the effects of nonstandard work schedules on marital quality and stability were limited to night- and rotating-shift workers with children. It may well be that if the evening shift was taking too big a toll on the marriage from either spouse's point of view, the wife probably would have changed her schedule or left that job. In the case of marital-role quality and distress, although we found no negative effects, it is important not to overinterpret this lack of difference pending confirmation in a larger sample.

Evening-shift work is associated with a dramatically different home life than day-shift work. Most strikingly, wives' evening work results in a re-gendering of the division of household and child care tasks. For example, fathers in these families spend much more time directly involved with their children than do fathers whose wives regularly work the day shift (Barnett & Gareis, 2007). And men whose wives work evenings do more "feminine" household tasks than fathers whose wives work days (Presser, 2003). At the same time, mothers' shift is unrelated to the amount of time they spend with their children (Barnett & Gareis, 2007). Thus, despite the fact that the mothers in this sample are primarily working weekdays—days on which evening shifts should be most disruptive of time with children because children are in school during the time that their mothers are not at work—the evening-shift mothers in this sample are nevertheless finding ways to make up the time that they miss with their children on days that they work.

Although we found some negative effects, particularly regarding increased work–family conflict, our data do not support the idea that this striking change in home life has consistent negative effects on either spouse in terms of outcomes such as psychological distress and marital-role quality. For wives, evening-shift work is associated both with high work–family conflict and, if they also work long hours, with low psychological distress. Moreover, wives' marital-role quality is not associated with their shift schedule, their work hours, or the interaction between the two. For husbands, neither their psychological distress nor their evaluation of the quality of their marriage is associated with their wives' shift schedule or the

number of hours their wives work. However, there was a tendency for husbands to report higher work–family conflict when their wives worked long hours on the evening shift. Thus, we find limited support for the linked-lives hypothesis, at least with respect to the outcome variables in this study.

Building on the findings from a previous longitudinal within-couple analysis of the relationship between work hours and several quality-of-life outcomes (Barnett et al., 2006), it is possible that the effects of shift schedule and number of work hours on both spouses would be more striking if we had had longitudinal data and, therefore, the ability to study the effects of changes in work shift and work hours. In the Barnett et al. (2006) study, the vast majority (12 of 14) of the significant effects were effects of *changes* in work hours rather than of work hours per se. This may indicate that work hours have their greatest effects during the adjustment period to a change in hours, but that once families have adapted to a particular work schedule, there are few remaining effects of the absolute number of hours worked. The same conclusion may apply to evening-shift work.

It may also be true that wives and husbands pay a price with respect to outcomes not assessed in this report. For example, mothers who work evenings may perceive relatively high work–family conflict because they spend less time in personal care, leisure, or sleep than their counterparts who work days, possibilities that seem likely given that they do not stint on the amount of time they spend with their children despite regularly being away from home during the after-school and evening hours (Barnett & Gareis, 2007).

Moreover, registered nurses are atypical shift workers. Of particular importance, they have more control over their work schedules than do most shift workers. Thus, it is not clear whether our results would generalize to a more heterogeneous sample of married female shift workers. Major among the limitations of this study are that the data are cross-sectional and the sample is composed of couples in which the wife has been working her particular shift for at least a year. Thus, there is no way to know whether these results would generalize to couples in which the wife is just beginning to work a nonstandard shift. It is also not possible to tell whether the results reflect successful adaptation to a less-than-ideal situation. To address these limitations, future research should be both prospective and longitudinal. In addition, in a larger sample, the trend for men to report high work–family conflict if their wives regularly work long hours in the evenings might reach conventional levels of significance, and, in general, smaller effects on well-being for both members of the couple might be detectable. Thus, future research should be done with larger samples. Finally, future research should

include single-parent families and dual-earner families in which the father works a nonstandard shift.

In sum, the findings of the present study support Presser's (2003) observation that the consequences of nonstandard work schedules on the family "are complex, since they depend not only on the type of family but on the particular work schedule, the gender of the person working this schedule, and whether she or he has children; moreover . . . there are positive as well as negative family consequences of employment at nonstandard times (pp. 215-216).

## Appendix

### Work-Family Conflict Items

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How often have you experienced each of the following during the past 3 months?

1. Because of my job, I didn't have the energy to do things with my family or other important people in my life.
2. My job made it difficult to maintain the kind of relationships with my family that I would like.
3. Behavior that was effective and necessary for me at work was counter-productive at home.
4. During the past 3 months, I would rate the interference of my job with my personal life as:
5. My family or personal life drained me of the energy I needed to do my job.
6. I was preoccupied with personal responsibilities while I was at work.
7. Behavior that was effective and necessary for me at home was counter-productive at work.
8. During the past 3 months, I would rate the interference of my personal life with my job as:

The response scale for Items 1-3 and 5-7 was 1 (*rarely*), 2 (*sometimes*), 3 (*often*), and 4 (*most of the time*). The response scale for Items 4 and 8 was 1 (*minimal*), 2 (*moderate*), 3 (*considerable*), and 4 (*very considerable*).

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## References

- Barnett, R. C., Brennan, R. T., Raudenbush, S. W., & Marshall, N. L. (1994). Gender and the relationship between marital-role quality and psychological distress. *Psychology of Women Quarterly, 18*, 105-127.

- Barnett, R. C., & Gareis, K. C. (2000). Reduced-hours employment: The relationship between difficulty of trade-offs and quality of life. *Work and Occupations, 27*, 168-187.
- Barnett, R. C., & Gareis, K. C. (2002). Full-time and reduced-hours work schedules and marital quality: A study of female physicians with young children. *Work and Occupations, 29*, 364-379.
- Barnett, R. C., & Gareis, K. C. (2007). Shift work, parenting behaviors, and children's socioemotional well-being: A within-family study. *Journal of Family Issues, 28*, 727-748.
- Barnett, R. C., Gareis, K. C., & Brennan, R. T. (1999). Fit as a mediator of the relationship between work hours and burnout. *Journal of Occupational Health Psychology, 4*, 307-317.
- Barnett, R. C., Gareis, K. C., & Brennan, R. T. (2006). *Time to consider time: A longitudinal within-couple analysis of total family work hours*. Manuscript submitted for publication.
- Barnett, R. C., Marshall, N. L., Raudenbush, S., & Brennan, R. (1993). Gender and the relationship between job experiences and psychological distress: A study of dual-earner couples. *Journal of Personality and Social Psychology, 64*, 794-806.
- Barnett, R. C., & Shen, Y.-C. (1997). Gender, high- and low-schedule-control housework tasks, and psychological distress. *Journal of Family Issues, 18*, 403-428.
- Baruch, G., Barnett, R., & Rivers, C. (1985). *Lifeprints: New patterns of love and work for today's women*. New York: Signet.
- Baruch, G. K., & Barnett, R. C. (1986). Consequences of fathers' participation in family work: Parents' role strain and well-being. *Journal of Personality and Social Psychology, 51*, 983-992.
- Bogen, K., & Cherlin, A. (2004, April). *Jobs and parenting 24-7: Work schedules and parenting of the working poor*. Paper presented at the 2004 Annual Meeting of the Population Association of America, Boston.
- Bolger, N., DeLongis, A., Kessler, R. C., & Wethington, E. (1989). The contagion of stress across multiple roles. *Journal of Marriage and Family, 51*, 175-183.
- Brennan, R. T., & Barnett, R. C. (1998). Negative affectivity: How serious a threat to self-report studies of psychological distress? *Women's Health: Research on Gender, Behavior, and Policy, 4*, 369-384.
- Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Cambridge, MA: Harvard University Press.
- Burke, M. J., Brief, A. P., & George, J. M. (1993). The role of negative affectivity in understanding relations between self-reports of stressors and strains: A comment on the applied psychology literature. *Journal of Applied Psychology, 78*, 402-412.
- Chesley, N., & Moen, P. (2006). When workers care: Dual-earner couples' caregiving strategies, benefit use, and psychological well-being. *American Behavioral Scientist, 49*, 1248-1269.
- Cox, M. J., & Paley, B. (1997). Families as systems. *Annual Review of Psychology, 48*, 243-267.
- Crouter, A. C., Bumpus, M. F., Maguire, M. C., & McHale, S. M. (1999). Linking parent's work pressure and adolescents' well-being: Insights into dynamics in dual-earner families. *Developmental Psychology, 35*, 1453-1461.
- Derogatis, L. R. (1975). *The SCL-90-R*. Baltimore: Clinical Psychometrics.
- Deutsch, F. M. (1999). *Halving it all: How equally shared parenting works*. Cambridge, MA: Harvard University Press.
- Grosswald, B. (2004). The effects of shift work on family satisfaction. *Journal of Contemporary Human Services, 85*, 413-423.
- Han, W. J. (2004). Nonstandard work schedules and child care decisions: Evidence from the NICHD Study of Early Child Care. *Early Childhood Research Quarterly, 19*, 231-256.
- Hertz, R., & Charlton, J. (1989). Making family under a shiftwork schedule: Air Force security guards and their wives. *Social Problems, 36*, 491-507.

- Heymann, J. (2000). *The widening gap: Why America's working families are in jeopardy—and what can be done about it*. New York: Basic Books.
- Hyde, J. S., & Plant, E. A. (1996). *Factor structure of Barnett's partner rewards and concerns scale*. Unpublished manuscript, University of Wisconsin–Madison.
- Jacobs, J. A., & Gerson, K. (2004). *The time divide: Work, family and gender inequality*. Cambridge, MA: Harvard University Press.
- La Valle, I., Arthur, S., Millward, C., Scott, J., & Clayden, M. (2002). *Happy families? Atypical work and its influence on family life*. Bristol, UK: Policy Press.
- MacDermid, S. M., Barnett, R., Crosby, F., Greenhaus, J., Koblenz, M., Marks, S., et al. (2000). *The measurement of work/life tension: Recommendations of a virtual think tank*. Boston: Alfred P. Sloan Foundation.
- Moorehead, A. (2003). *How employed mothers allocate time for work and family*. Unpublished doctoral dissertation, University of Sydney, Australia.
- Noor, N. M. (1997). Work and family roles in relation to women's well-being: The role of negative affectivity. *Personality and Individual Differences*, 23, 487-499.
- Ozer, E. M., Barnett, R. C., Brennan, R. T., & Sperling, J. (1998). Does child care involvement increase or decrease distress among dual-earner couples? *Women's Health: Research on Gender, Behavior, and Policy*, 4, 285-311.
- Parcel, T. L., & Menaghan, E. G. (1994). *Parents' jobs and children's lives*. New York: Aldine de Gruyter.
- Presser, H. B. (2000). Nonstandard work schedules and marital instability. *Journal of Marriage and Family*, 62, 93-110.
- Presser, H. B. (2003). *Working in a 24/7 economy*. New York: Russell Sage.
- Probert, B. (2005). "I just couldn't fit it in": Gender and unequal outcomes in academic careers. *Gender, Work and Organization*, 12, 50-72.
- Raudenbush, S. W., Brennan, R. T., & Barnett, R. C. (1995). A multivariate hierarchical model for studying psychological change within married couples. *Journal of Family Psychology*, 9(2), 161-174.
- Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods*. Thousand Oaks, CA: Sage.
- Raudenbush, S. W., Bryk, A. S., Cheong, Y. F., & Congdon, R. (2004). *HLM 6: Hierarchical linear and nonlinear modeling*. Chicago: Scientific Software International.
- Repetti, R. L. (1989). Effects of daily workload on subsequent behavior during marital interaction: The roles of social withdrawal and spouse support. *Journal of Personality and Social Psychology*, 57, 651-659.
- Repetti, R. L. (1994). Short-term and long-term processes linking job stressors to father-child interaction. *Social Development*, 3, 1-15.
- Schulz, M. S., Cowan, P. A., Cowan, C. P., & Brennan, R. T. (2004). Coming home upset: Gender, marital satisfaction, and the daily spillover of workday experience into couple interactions. *Journal of Family Psychology*, 18, 250-263.
- Spielberger, C. D. (1983). *Manual for the State-Trait Anxiety Inventory*. Palo Alto, CA: Consulting Psychologists Press.
- Staines, G. L., & Pleck, J. H. (1983). *The impact of work schedules on the family*. Ann Arbor: University of Michigan Institute for Social Research.
- Staines, G. L., & Pleck, J. H. (1984). Nonstandard work schedules and family life. *Journal of Applied Psychology*, 69, 515-523.
- Stolzenberg, R. M. (2001). It's about time and gender: Spousal employment and health. *American Journal of Sociology*, 107, 61-100.

- Strazdins, L., Korda, R. J., Lim, L. L.-Y., Broom, D. H., & D'Souza, R. M. (2004). Around-the-clock: Parent work schedules and children's well-being in a 24-h economy. *Social Science & Medicine*, *59*, 1517-1527.
- Thompson, J. A., & Bunderson, J. S. (2001). Work-nonwork conflict and the phenomenology of time: Beyond the balance metaphor. *Work and Occupations*, *28*, 17-39.
- White, L., & Keith, B. (1990). The effect of shift work on the quality and stability of marital relations. *Journal of Marriage and Family*, *52*, 453-462.