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Shift Work, Parenting Behaviors, and Children's Socioemotional Well-Being

A Within-Family Study

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Many U.S. employees with children work nonstandard hours, yet we know little about the linkages among maternal shift schedules, mothers' and fathers' parenting behaviors, and children's socioemotional outcomes. In a sample of 55 dual-earner families with children age 8 to 14 years and mothers working day versus evening shifts, the authors found that mothers' work schedules are unrelated to their parenting behaviors. However, fathers whose wives work evenings (vs. days) spend more time with children, know more about children's activities, receive more disclosures from children, and have better parenting skills, variables that are inversely associated with children's internalizing, externalizing, and risk-taking behaviors.

Keywords: *child outcomes; parenting behaviors; shift work; time with children*

An increasing number of dual-earner couples in the United States have at least one partner who works a nonstandard schedule, and many of these couples have children (Presser, 2003). The scheduling of employment time has significant repercussions for how individuals organize and coordinate family life. When one spouse works a nonstandard shift, traditional family roles are disrupted, with likely effects on children's socioemotional

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outcomes. Yet we know almost nothing about the within-family linkages between maternal shift schedules, mothers' and fathers' parenting behaviors, and children's socioemotional outcomes (i.e., internalizing, externalizing, and risky behaviors).

Does children's socioemotional well-being differ depending on whether their mothers work the evening shift (typically 3:00 p.m. to 11:00 p.m.) or the day shift (typically 7:00 a.m. to 3:00 p.m.)? Do the fathers in families with day-shift versus evening-shift mothers differ in the amount of time they spend with their children? Is parents' time with children related to children's socioemotional outcomes? Is the effect of maternal shift-work schedule on children's outcomes mediated by fathers' time with children? How do children and parents in these two types of families view their mothers' and fathers' parenting behaviors? How are parenting behaviors—as rated by children and the parents themselves—related to children's socioemotional outcomes? We address these questions in a sample of 55 families (55 mothers, 55 fathers, and 55 children age 8 to 14 years; total $N = 165$) in which the mothers are registered nurses (RNs) who regularly work either day shifts or evening shifts, the fathers are employed full-time, and they have at least one school-age child who is at least age 8 years but has not yet started high school.

We decided to sample only mothers who worked days or evenings, and not nights or rotating shifts, because they represent extremes in terms of their regular availability to supervise their children during the after-school hours; day-shift nurses are available, evening-shift nurses are not. (Mothers who work nights, 11:00 p.m. to 7:00 a.m., are also available during the after-school hours but are a much smaller and more atypical group than mothers who work days.)

The decision to sample schoolchildren in this age range was based on two considerations: (a) We wanted to collect closed-ended survey data from the children on their own risky behaviors and on their perceptions of their mothers' and fathers' parenting behaviors. Therefore, the children had to be old enough to understand the questions and to provide reliable data; and (b) younger children require more supervision after school than older children, and at the same time, few after-school programs are available for tweens and early teens.

Data were collected separately from the mothers, the fathers, and the children in the target age range. For the analyses reported in this article, we rely on data from the mothers on parents' time directly involved with the child and on the child's internalizing and externalizing behaviors. Children provided data on their own risky behaviors and on their mothers' and fathers'

parental knowledge, parenting skills, and the extent to which the children spontaneously disclose information about their activities to their parents. Finally, mothers and fathers provide data on their perceptions of their own parenting skills.

Our within-family approach to understanding the complex relationships among parents' work schedules, mothers' and fathers' parenting behaviors, and children's socioemotional outcomes is consistent with Bronfenbrenner's (1979) ecological theory and with family-systems theory. In Bronfenbrenner's view, child outcomes need to be understood in the context of the child's family situation, important components of which are the particular hours that the parents are at work and their parenting behaviors. The general assumption is that greater parental involvement will be associated with better child outcomes than lesser parental involvement. This assumption receives considerable support from the empirical literature (e.g., Aldous & Mulligan, 2002; Updegraff, McHale, Crouter, & Kupanoff, 2001; Zick, Bryant, & Osterbacka, 2001). This approach is also consistent with family systems theory (see Cox & Paley, 1997, for a review), which emphasizes the interdependence among all family members.

Given that this is the first study to address these questions and that the sample is small and nonrepresentative of shift workers, who generally have less choice about their work schedules and lower levels of education and other resources than do RNs, we recognize that our results may not be fully generalizable. The results of this exploratory study will, however, develop theoretical insights that might inform future research on the within-family dynamics of shift-working families with school-age children.

Literature Review

Among all workers in the United States, and increasingly in other countries, nonstandard schedules are normative (Presser, 2003; Strazdins, Korda, Lim, Broom, & D'Souza, 2004). With respect to all full-time dual-earner couples in the United States, slightly more than one half have at least one spouse who works nonstandard hours (i.e., nonday, rotating, or weekend schedules). Moreover, the prevalence of nonstandard schedules is high for those with children and those without children (Presser, 2003). The percentage varies somewhat with the number and ages of the children. For example, it increases to 54.4% among couples with a school-age child (i.e., age 5 to 13 years) and decreases to 50.6% among couples with no child younger than age 14 years (Presser, 2000). In addition, the younger the age of the spouses, the

lower their education, and the larger the number of children, the higher the percentage working nonstandard schedules (Presser, 2003). Thus, a substantial number of employees, whether they have children or not, are working nonstandard schedules or are married to a spouse working a nonstandard schedule.

Moreover, the percentage of employees working nonstandard shifts is likely to increase. Future job growth in the United States is projected to be disproportionately high in occupations in which shift work is common, such as cashier, truck driver, commodities sales worker in retail and personal services, and wait staff (Presser, 2003). In addition to service-sector occupations, shift work is normative among health care workers, especially nurses working in hospitals or other 24-hr settings. Because many of these jobs are dominated by female employees, this anticipated job growth will disproportionately involve more women (Presser, 2003). Yet little empirical attention has been paid to the relationship between maternal shift work, mothers' and fathers' parenting behaviors, and children's socioemotional well-being.

Most shift workers have little choice over their work schedules: The demands of their jobs dictate their work hours (Presser, 2003). However, RNs are an exception to this generalization; they tend to choose their shifts, often for family reasons (Bogen & Cherlin, 2004). When one partner works a nonstandard shift, for whatever reason, the other partner's work and family roles are affected, in some cases more than in others (Garey, 1999; Hattery, 2001), with likely effects on children's well-being. According to the work-family adaptive strategy model described by Barnett (1998), the decision about how many and which hours each parent should work reflects, at least in part, the financial and emotional goals the couple wishes to achieve for their work-family system. One such goal is increasing the likelihood of positive child outcomes by providing maximal parental child care time (Mennino & Brayfield, 2002). Maternal day-shift and evening-shift schedules offer this benefit, and preliminary interviews conducted in preparation for the current study suggest that this is the primary reason most families with mothers who are RNs choose to have the mothers work one of these shift schedules. Day-shift schedules allow mothers to be at home during the after-school hours, whereas evening-shift schedules allow mothers and fathers to offset their work schedules so that mothers can care for children in the mornings and fathers can care for children in the afternoons and evenings. Thus, maternal day-shift schedules maximize parental child care time provided by mothers, and maternal evening-shift schedules maximize parental child care provided by mothers and fathers. In the current study, then, we focus on the association between maternal shift work and children's socioemotional well-being. A possible association is between maternal shift-work schedule (day vs. evening), parents' time with children, and children's socioemotional well-being.

Considerable research has been done on the linkages between maternal employment and the amount of time mothers spend with their children. Several studies suggest that regardless of their employment status or their work schedules, mothers do not sacrifice time with their children (Bianchi, 2000; Bogen & Cherlin, 2004). Rather, they may sleep fewer hours and forgo leisure activities (Bianchi, 2000, 2002; Kingston & Nock, 1985). A recent study (Bogen & Cherlin, 2004) found that maternal nonstandard work schedules did not affect how mothers actually parent in terms of the time they spend with their children. Based on this body of research, we do not expect a direct effect of maternal day- versus evening-shift schedules on mother's time with the child (i.e., average number of hours spent each week directly interacting with the child).

Several studies suggest that fathers play a more active role in parenting when mothers are employed (Gottfried, Bathurst, & Gottfried, 1994; Hoffman & Youngblade, 1999). Furthermore, fathers' caregiving has been associated with mothers' work schedules (Brayfield, 1995; Presser, 2003). In dual-earner families, the likelihood that fathers would be caregivers to their children varied with the mother's work schedule (but not their own work schedule) and the age of the child (Brayfield, 1995). A key factor associated with increases in fathers' caregiving appears to be the degree of nonoverlap in the parents' work schedules (Brayfield, 1995; Presser, 2000). In the current study, the large majority (69%) of fathers worked either a 9 a.m. to 5 p.m. schedule or a day shift. Thus, nonoverlap would be lowest if both parents worked the day shift and highest if the mother worked evenings and the father worked days. (Because so few fathers worked nonday hours, we excluded fathers' work schedule as a variable in our analyses.) Building on the work of Brayfield (1995) that focused only on whether the father was a caregiver, we predict that fathers whose wives regularly work evenings will spend more time directly involved with their children than fathers whose wives regularly work days.

Hypothesis 1a: Maternal work schedule (regularly working day vs. evening shifts) will not affect the time mothers spend directly involved with their children.

Hypothesis 1b: Fathers whose wives regularly work evening shifts will spend more time directly involved with their children than will fathers whose wives regularly work day shifts.

Although less well studied, shift-work schedules seem to have differential effects on child outcomes. With respect to maternal shift work, however, research has documented an association between mothers' nonstandard work schedules and their children's physical and cognitive outcomes

(Han, 2005; Heymann, 2000). For example, parents who work evenings or nights are more likely than other parents to have to leave their sick children by themselves. Thus, nonstandard work schedules may increase the risk of children's poor physical health outcomes. In addition, children whose mothers work nonstandard schedules during their first 3 years of life show poorer cognitive development and expressive language skills (Han, 2005). At present, there is scant systematic research on the association between the specific times parents work and their children's socioemotional outcomes, including internalizing, externalizing, and risky behaviors (for exceptions, see La Valle, Arthur, Millward, Scott, & Clayden, 2002; Strazdins et al., 2004).

Strazdins et al. (2004) compared children's socioemotional outcomes in families where both parents worked standard hours with families where one or both worked nonstandard hours (i.e., evenings, nights, or weekends) in a nationally representative sample of 4,433 dual-earner Canadian families and their 2- to 11-year-old children ($N = 6,361$ children). In nearly three fourths of the families, one or both parents regularly worked nonstandard times. The researchers found associations between parents' work schedules and children's well-being, with higher odds ratios for child difficulties when parents worked nonstandard times. Children with a parent working a nonstandard schedule were more likely to have at least one emotional or behavioral difficulty compared to children whose parents worked during day hours. It is important to note that these findings provide no insight into the possible mechanisms linking mothers' shift work to their children's socioemotional well-being. One such plausible linking mechanism is fathers' time with children.

It is also important to note that in the Strazdins et al. (2004) study, data were collected from only one person per family, usually the mother; that all nonstandard shifts were grouped together, so it was not possible to determine whether the negative effects were more pronounced for children when the parent (mother or father) worked evening versus night shifts; and that no information was provided on the parenting behaviors of the other parent. In the current study, mothers provided data on their and their husband's solo and joint time directly involved with the children and on their children's internalizing and externalizing behaviors. In part to avoid same-source bias and in part to obtain data directly from the object of our concern, children furnished data on their own risky behaviors and rated each parent's knowledge about the child's activities, the extent to which they spontaneously disclosed information to each parent, and each parent's parenting skills.

Hypothesis 2a: Fathers' time with children will be positively related to child's socioemotional well-being (defined as low levels of internalizing, externalizing, and risk-taking behaviors).

In addition, previous research suggests that fathers' time with children might mediate the effects of maternal shift work on child outcomes (e.g., Han, 2005). In one study of two-parent families with school-age children, Crouter and her team found that parental knowledge among fathers was related to mothers' work schedule. The more time mothers spent at work, the greater was the fathers' parental monitoring (Crouter, Helms-Erikson, Updegraff, & McHale, 1999). And a large body of literature links parental time with children and parental monitoring with such child outcomes as internalizing, externalizing, and risky behaviors (Aldous & Mulligan, 2002; Amato & Rivera, 1999; Crouter, Head, McHale, & Tucker, 2004; Deutsch, Servis, & Payne, 2001; Dornbusch et al., 1985; Kerr & Stattin, 2000; Ozer, Park, Paul, Brindis, & Irwin, 2003). However, no study has examined simultaneously the impact of maternal shift work and parents' time with children on child outcomes. We predict that mothers' shift schedules will have a direct effect on fathers' time with children that in turn will be related to child outcomes.

Hypothesis 2b: The relationship between maternal shift work and child outcomes will be mediated by fathers' time with children.

Parents know more about their children's activities when the children feel closer to them, and there is no evidence that the closeness of the mother-child relationship differs depending on the mother's work schedule. Whereas fathers' knowledge of their children's activities seems to depend on mothers' work schedule, as discussed above, the same is not true for mothers' knowledge. Evidence indicates that the number of hours mothers work (Crouter et al., 1999; Crouter & McHale, 1993) and the distribution of those hours (Nock & Kingston, 1988) do not affect maternal knowledge about their children but can pull fathers into more engaged parenting. In one study (Crouter & McHale, 1993), fathers knew more about their children's experiences when mothers worked more hours, whereas mothers maintained the same level of knowledge regardless of their work hours. It appears that "fathers may calibrate the extent to which they monitor their school-age children in part as a function of mothers' availability" (Crouter & McHale, 1993, p. 203). Thus, we expect that fathers in families in which the mother works the evening versus the day shift will be more knowledgeable about their children's activities.

Research suggests that school-age children who have close and caring connections to their parents have lower levels of emotional distress, suicidality, involvement in violence, and use of cigarettes, alcohol, and marijuana compared to their counterparts who felt less connected to their parents (Resnick et al., 1997). In addition, children who have close relations with their parents may volunteer information about the day's events, thereby increasing parental knowledge (Crouter et al., 1999). It appears that children's spontaneous disclosures are more strongly related to children's outcomes than is parental solicitation (Kerr & Stattin, 2000). We expect that, on average, children whose mothers work evening shifts will disclose more to their fathers than children whose mothers work day shifts because of the greater opportunity to spend time alone with their fathers in the evenings. In contrast, we do not expect children's spontaneous disclosures to mother to be related to maternal shift.

To the extent that children whose mothers regularly work evening shifts spend more time directly involved with their fathers and perceive their fathers as more knowledgeable about their activities than do children whose mothers regularly work day shifts, they might also grade their fathers higher on parenting skills.

Hypothesis 3a: Children's ratings of their mothers' parental knowledge and parenting skills and of their own spontaneous disclosures to their mothers will not differ depending on their mother's work shift schedule.

Hypothesis 3b: Children whose mothers regularly work evening shifts will rate their fathers' parental knowledge and parenting skills and their own spontaneous disclosures to their fathers higher than will children whose mothers regularly work day shifts.

Furthermore, among school-age children, more engaged parenting has been linked to such positive child outcomes as school achievement, feelings of scholastic competence, low levels of conduct problems, and low levels of initiation to drug use (reviewed in Crouter et al., 1999). Thus, we expect a positive relationship between fathers' parenting behaviors and child outcomes.

Hypothesis 4a: Children who rate their fathers as having better parental knowledge and parenting skills and who spontaneously disclose more about their activities to their fathers will exhibit fewer internalizing, externalizing, and risky behaviors than other children.

Hypothesis 4b: The relationship between maternal shift work and child outcomes will be mediated by fathers' parental knowledge and parenting skills and by children's spontaneous disclosures to fathers.

Other research has shown that the more time fathers spend in child care, the higher they rate their competence as parents (Baruch & Barnett, 1986). Thus, to the extent that fathers whose wives regularly work evening shifts spend more time directly involved with their children, we expect them to rate their own parenting skills higher than do fathers whose wives regularly work day shifts.

Hypothesis 5a: Maternal work schedule (regularly working day vs. evening shifts) will not affect mothers' ratings of their own parenting skills.

Hypothesis 5b: Fathers whose wives regularly work evening shifts will rate their own parenting skills higher than will fathers whose wives regularly work day shifts.

Based on research showing that parents' perceptions of their own efficacy are related to better outcomes, including lower levels of risky behaviors, in their adolescent children (Elder, Eccles, Ardelt, & Lord, 1995; Ozer, 2004), we predict that fathers' ratings of their own parenting skills will be similarly associated with better socioemotional outcomes in children.

Hypothesis 6a: Children whose fathers rate their own parenting skills higher will exhibit fewer internalizing, externalizing, and risky behaviors than other children.

Hypothesis 6b: The relationship between maternal shift work and child outcomes will be mediated by fathers' ratings of their own parenting skills.

Finally, previous research suggests that child's gender and age affect the amount of time parents spend with their school-age children (Crouter et al., 1999; Updegraff et al., 2001). Unfortunately, the sample in the current study is not large enough to investigate these moderating effects. However, we do control for child's age and gender in all analyses.

Method

Participants

We conducted quantitative interviews with 55 Boston-area dual-earner families with children ($N = 165$ individuals) in which the mother was a RN 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. To be eligible, the nurse had to work at least 28 hr per week in a 24-hr 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 age 8 years but had not yet started high school. All mothers, fathers, and children in the target age range were interviewed. The final sample size of 165 individuals consisted of 55 mothers, 55 fathers, and 55 children between age 8 and 14 years.

Most (94.5%) of the families were White; the rest (5.5%) were Asian. Parents' ages ranged from 32 to 56 years ($M = 42.7$ for mothers, 44.0 for fathers). On average, couples had been married for 15.2 years ($SD = 4.8$) and had between two and three children ($M = 2.5$, $SD = .7$, range = 1 to 4). On average, mothers worked 35.2 hr per week ($SD = 7.3$), and fathers worked 45.2 hr per week ($SD = 7.5$).

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 current 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 min for the mothers, 35 min for the fathers, and 15 min 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' mailouts took approximately 20 min per

child to complete, and the fathers' mailouts took approximately 5 min per child to complete. The interviews and mailed surveys covered objective and subjective aspects of parents' jobs and work schedules and a variety of socioemotional outcomes for the parents and the children. Parenting behaviors were also assessed. Each family received U.S. \$100 for their participation, plus \$25 for each additional child beyond the first who participated.

In each participating family, every child who was in the target age range was interviewed, with one exception: One mother reported that one of her age-eligible children was not capable of participating in an interview because of relatively severe autism. Because only 16 families had more than one age-eligible child, only data from the oldest age-eligible participating child in each family are presented here.

Measures

Maternal work schedule was coded as a dichotomous variable (1 = regularly works day shifts, 2 = regularly works evening shifts). Child age is self-explanatory; child gender was coded as a dichotomous variable (1 = male, 2 = female).

Child's time directly involved with mother and father was measured by asking mothers to consult with other family members as necessary to fill out a grid loosely adapted from Nock and Kingston (1988) describing how their children spent their time during a typical 7-day week of the school year when the children were with one or both of their parents. Mothers listed the child's specific activities (e.g., watching television, doing homework, playing games) and then indicated whether the mother only, the father only, or both parents participated in the activity with the child. For children whose schedules differed from week to week, the mother filled out as many weekly grids as necessary to describe the child's time with parents; hourly totals were divided by the number of grids so that the final result represents the average number of hours in 1 week that the child spends directly interacting with the mother only, the father only, or both parents at once.

Parental knowledge was measured using a 9-item scale developed by Kerr and Stattin (2000). Children were asked to rate their mothers and fathers separately on a 4-point scale ranging from 1 (*almost never*) to 4 (*almost always*) how often their parents were aware of the child's activities in nine domains (e.g., what the child does during his or her free time, when the child has an exam or a paper due at school, where the child goes when out with friends). Cronbach's alphas were .72 for children's ratings of their mothers and .76 for children's ratings of their fathers.

Child disclosure was measured using a 5-item scale developed by Kerr and Stattin (2000). Children indicated on a 4-point scale ranging from 1 (*almost never*) to 4 (*almost always*) how often they spontaneously disclosed information about their activities in five domains (e.g., how school was that day, what the child does during nights and weekends) to their mothers and to their fathers. Cronbach's alphas were .47 for children's ratings of their mothers and .63 for children's ratings of their fathers.

Child's rating of parenting skills was measured by asking children to grade their mothers and fathers separately on a 5-point scale ranging from 1 (*a grade of "F"*) to 5 (*a grade of "A"*) on a list of 12 different parenting skills such as "making me feel important and loved" and "raising me with good values" (Galinsky, 1999). Cronbach's alphas were .74 for children grading mothers and .89 for children grading fathers.

Parents' ratings of parenting skills were measured by asking both parents to grade themselves on the scale described above. Cronbach's alphas were .80 for mothers grading themselves and .87 for fathers grading themselves.

Child's behavioral adjustment was measured by asking mothers to fill out a modified version of the internalizing and externalizing subscales from the Child Behavior Checklist (Achenbach & Rescorla, 2001). Five items were dropped from the original Rule-Breaking Behavior subscale because they were age inappropriate for the current sample (e.g., uses drugs). The Anxious/Depressed, Withdrawn/Depressed, and Somatic Complaints subscales were combined into a 32-item measure of internalizing behaviors, and the Rule-Breaking Behavior and Aggressive Behavior subscales were combined into a 30-item measure of externalizing behaviors. Mothers were asked to indicate on a 3-point scale ranging from 0 (*not true*) to 2 (*very true or often true*) how well the item reflected the child's current behavior. Cronbach's alphas were .85 for internalizing behaviors and .77 for externalizing behaviors.

Child's risk-taking behaviors were measured using a scale adapted from the NICHD Study of Early Child Care (e.g., NICHD Early Child Care Research Network, 1998). Children were asked to indicate on a 3-point scale ranging from 1 (*never*) to 3 (*more than twice*) how often they had engaged in each of nine different risk behaviors such as riding a bike without a helmet, doing something dangerous on a dare, skipping school without permission, and having a fist fight with another person. Cronbach's alpha was .51.

Results

To test the hypotheses about differences between families with mothers who regularly work day versus evening shifts, we conducted a series of

Table 1
Estimated Marginal Means for Effects of Maternal
Work Shift on Parenting Behaviors

Maternal Work Shift	Mothers		Fathers		Both Parents, Singly and Jointly	
	Day	Evening	Day	Evening	Day	Evening
Time directly involved with child (hours per week)	11.72 <i>ns</i>	9.85	4.00***	8.91	<i>ns</i>	30.10
Knowledge of child's activities (scale from 1 to 4)	3.70 <i>ns</i>	3.76	3.42*	3.67		
Child's disclosure to parents (scale from 1 to 4)	3.56 <i>ns</i>	3.66	3.28*	3.54		
Child's rating of parenting skills (scale from 1 to 5)	4.65 <i>ns</i>	4.75	4.40*	4.69		
Parents' rating of parenting skills (scale from 1 to 5)	4.40 <i>ns</i>	4.52	4.17*	4.44		

Note: $N = 55$ families, 29 with mothers who regularly work day shifts and 26 with mothers who regularly work evening shifts. Estimated marginal means are derived from a univariate ANOVA controlling for the child's age and gender.

* $p < .05$. *** $p < .001$.

univariate ANOVAs with day versus evening maternal shift as the predictor and child age and gender as covariates. As shown in Table 1, there is no significant difference between day-shift and evening-shift mothers in the amount of time they spend directly involved with their children, $F(1, 48) = .71, p = .403$. This finding supports Hypothesis 1a. However, maternal work shift is a significant predictor of the time that fathers spend directly involved with their children, $F(1, 48) = 19.22, p = .000$. As shown in Table 1, fathers whose wives work evening shifts spend more than twice as many hours per week with their children on average than did fathers whose wives work day shifts. This difference corresponds to a Cohen's d' of .86, which is classified as a large effect (Cohen, 1988). This finding supports Hypothesis 1b.

Table 2 shows partial correlations between parenting behaviors and children's well-being, controlling for the child's age and gender. For fathers, the amount of time they spend directly involved with their child is associated with lower levels of internalizing and externalizing behaviors,

Table 2
Partial Correlations Between Parenting
Behaviors and Children's Well-Being

	Internalizing Behaviors		Externalizing Behaviors		Risk-Taking Behaviors	
	Fathers	Mothers	Fathers	Mothers	Fathers	Mothers
Time directly involved with child	-.31*	.22	-.30*	.01	.05	.21
Knowledge of child's activities	-.06	.11	-.15	.03	-.44**	-.37**
Child's disclosure	-.02	.04	-.15	-.08	-.44**	-.44**
Child's rating of parenting skills	-.11	.11	-.31*	-.07	-.43**	-.43**
Parents' rating of parenting skills	-.35*	-.02	-.27 [†]	-.16	-.18	-.31*

Note: $N = 55$ families, 29 with mothers who regularly work day shifts and 26 with mothers who regularly work evening shifts. Partial correlations control for the child's age and gender.

[†] $p < .10$. * $p < .05$. ** $p < .01$.

but not with lower levels of risk-taking behaviors in the children. These findings provide partial support for Hypothesis 2a. For mothers, the amount of time they spend directly involved with their child is unrelated to any of the three child outcomes.

There is evidence that the effects of maternal shift work on some child outcomes are mediated by father's involvement with the children. Although the current sample is relatively small, following Baron and Kenny (1986), we used the Goodman (I) version of the Sobel test to assess the statistical significance of the effect of the mediator time with children on the three child outcomes and found partial support for Hypothesis 2b. Time spent directly involved with father shows a trend to mediate the relationship between maternal work shift and children's internalizing behaviors ($z = -1.71$, $p = .087$) and is a significant mediator of the relationship between maternal work shift and children's externalizing behaviors ($z = -2.04$, $p = .041$). Given the small sample size, these results are encouraging and warrant further study.

The remaining findings for the effects of maternal work schedule on parenting behaviors followed the same pattern as time directly involved with

children; that is, as shown in Table 1, maternal work shift does not predict children's ratings of mothers' parental knowledge, $F(1, 51) = .57, p = .454$; child disclosure to mothers, $F(1, 51) = 1.03, p = .316$; or children's ratings of mothers' parenting skills, $F(1, 51) = 1.98, p = .166$. In contrast, maternal shift schedule does predict children's ratings of fathers' parental knowledge, $F(1, 51) = 5.01, p = .030$, with greater knowledge among fathers whose wives work evening shifts. The Cohen's d' of .43 indicates a medium-sized effect. Maternal shift schedule also predicts children's ratings of child disclosure to fathers, $F(1, 51) = 4.26, p = .044$, with greater disclosure to fathers whose wives work evening shifts. Again, the Cohen's d' of .40 indicates a medium-sized effect. Finally, maternal shift schedule predicts children's ratings of fathers' parenting skills, $F(1, 51) = 5.41, p = .024$, with better ratings of the parenting skills of fathers whose wives work evening shifts and a Cohen's d' of .44. These findings support Hypotheses 3a and 3b.

As shown in Table 2, children whose fathers know more about their activities and who disclose more to their fathers show significantly fewer risk-taking behaviors, and children who rate their fathers' parenting skills higher show significantly fewer externalizing and risk-taking behaviors, partially supporting Hypothesis 4a. The pattern of results is similar for mothers, with children whose mothers know more about their activities, who disclose more to their mothers, and who rate their mothers' parenting skills higher reporting engaging in fewer risk-taking behaviors. We found trends for fathers' knowledge of children's activities ($z = -1.82, p = .068$), children's disclosure to fathers ($z = -1.67, p = .094$), and father's parenting skills ($z = -1.81, p = .070$) to mediate the relationship between maternal work shift and child reports of their engagement in risk behaviors, partially supporting Hypothesis 4b. An alternative interpretation is possible: Fathers may interact more positively with children who engage in fewer risk-taking behaviors (e.g., Fortner, Crouter, & McHale, 2004). Again, given that the current sample is small, these marginally significant results warrant further attention.

In a familiar pattern, as shown in Table 1, maternal work shift does not predict mothers' ratings of their own parenting skills, $F(1, 51) = 1.53, p = .223$; however, it does predict fathers' ratings of their own parenting skills, $F(1, 51) = 4.79, p = .033$, with fathers whose wives work evening shifts rating their own parenting skills higher. The Cohen's d' of .42 indicates a medium-sized effect. Table 2 shows that fathers' high ratings of their own parenting skills are associated with significantly lower levels of internalizing behaviors and marginally lower levels of externalizing behaviors in their children, partially supporting Hypothesis 6a. The pattern of results is different

for mothers, with mothers' high ratings of their own parenting skills predicting lower levels of risk-taking behaviors in their children. We found no evidence that fathers' ratings of their own parenting skills mediate the relationship between maternal work shift and children's internalizing, externalizing, or risk-taking behaviors, offering no support for Hypothesis 6b.

Discussion and Conclusions

The major findings of this exploratory study of 55 dual-earner couples in which the mothers are RNs who regularly work either day or evening shifts, the fathers are employed full-time, and they have at least one school-aged child who is at least age 8 years but has not yet started high school are: (a) Mothers' work schedules do not affect the amount of time they spend directly involved with their children, their knowledge of their children's activities, their receipt of spontaneous disclosures from their children, or their children's or their own ratings of their parenting skills; (b) Mothers' work schedules do affect fathers' parenting behaviors and ratings of their own parenting skills. Specifically, in families with evening-shift mothers, fathers spend more time directly involved with children, children report that their fathers know more about their activities and that they spontaneously disclose more to their fathers, and children and fathers rate the fathers' parenting skills higher than in families with day-shift mothers; (c) Fathers' (and mothers') parenting behaviors are related to a number of socioemotional outcomes in their children, with the strongest results found for risk-taking behaviors; and (d) There is some suggestive evidence that the effects of maternal work shifts on child outcomes may be mediated by fathers' parenting behaviors.

Our results support those of previous research in suggesting that working mothers do not reduce their time with their children (Bianchi, 2000, 2002). We now have evidence that this conclusion holds true even when mothers work during nonstandard times of the day. Apparently these mothers compensate for their time at work during the after-school and evening hours by spending more time with their children before school and on days when they are not at work.

Confirming Bronfenbrenner's (1979) insight, these results strongly support the need to take the family as the unit of analysis in studies of child outcomes. In the absence of the children's reports of their fathers' parenting behaviors and the mothers' reports of parents' time spent directly involved, singly and jointly, with children, we would have drawn the erroneous conclusion that maternal shift schedule was unrelated to child outcomes simply because there

is no direct relationship between these two variables. In fact, it appears that the context of family life is different in families in which the mother works either the day or the evening shift, and the differing contexts affect child outcomes. Specifically, fathers in families in which mothers work evenings behave more like their wives vis-à-vis their children than fathers in families in which the mother works days. Compared to fathers whose wives work days, those whose wives work evenings spend more time directly involved with their children, are more knowledgeable about their children's activities, receive more spontaneous disclosures from their children, and are given higher ratings by their children on parenting behaviors. The findings appear to conflict with those of Brayfield (1995) indicating that only the number of hours mothers worked, but not the shift schedule, was associated with the likelihood that fathers would be caregivers to their school-age children. It is not clear how Brayfield's findings would have differed if the amount of time fathers spent with their children had been included as an outcome variable. Conceptually, however, our findings are consistent with those of Brayfield (1995) and Presser (2000) that nonoverlap in parents' hours predicted fathers' caregiving to children. In the current study, when mothers work evening shifts, there is more nonoverlap with their husbands' work schedules, and fathers spend more time directly involved with children in those families with evening-shift mothers.

The findings of greater paternal involvement with children (at least for some fathers) is consistent with national trends (Bond, Galinsky, & Swanberg, 1998). It is possible that this trend is more pronounced among younger than older fathers. Future research should explore the relationship between fathers' age cohort and fathers' involvement with children.

Given the exploratory nature of the current study, it is important to note that in a larger and more representative sample of families in which the wife is working a nonstandard schedule, the findings might be different. For example, with a larger sample, one could assess the nature and the quality of parent-child interactions and not rely solely on time spent with children as an outcome. It is also likely that the findings would differ among shift-working mothers who do not have as much control over their shift schedules or who do not earn as much income as do RNs. It is likely that the finer-grained analyses possible with a larger and more representative sample would yield more nuanced results.

We also found some evidence to support a plausible mediating link between maternal shift work, father's parenting behaviors, and child outcomes. It remains for future research with a more adequate sample to test this intriguing hypothesis.

Do fathers of evening-shift-working wives self-select into a more involved parenting role, or do they adapt to it out of necessity? With cross-sectional data, we cannot answer this question definitively; either or both of these processes may be at work. Perhaps fathers who want to be more engaged with their children encourage their wives to work the evening shift, or wives who trust their husbands to take on an active parenting role feel freer to work evening shifts. Or, consistent with work by Risman (1986) and Coltrane (2000), perhaps fathers whose wives work in the evenings respond to their increased caretaking responsibilities by developing good parenting skills. Finally, women who believe their husbands will pick up the slack at home might be more likely to select the evening shift.

Preliminary interviews that we conducted in preparation for the current study shed some light on these interpretations. Some husbands whose wives worked evening shifts reported initial concerns about their increased caretaking role but reported that they had been able to adapt. For example, one father of three whose wife worked evening shifts said: "When we are both here, it's really easy to manage. In her absence, I find it difficult, but I'm learning through trial and error." These qualitative data suggest that fathers whose wives work evening shifts "learn on the job." Their parenting skills seem to be a "consequence" rather than a "cause" of their wives' shift schedule choice. However, prospective longitudinal studies are needed to clarify these causal linkages.

The data suggest that for mothers to be able to work an evening shift, fathers must be flexible. It is also possible that in marriages in which the fathers were unable to take on these "female" tasks, the wives changed to a day shift or a job in a 9:00-to-5:00 setting (e.g., a doctor's office), left nursing, took a leave from work, or perhaps even divorced their husbands. In any case, the sample of couples with wives working evening shifts consisted of those who, whether by nature or by adaptation, adjusted well to the demands of the wife's nonstandard work schedule. To better understand these within-couple processes, future research should assess the preferred shift patterns of wives and husbands as well as their preferences regarding their spouses' shift patterns.

Most of the research on the effects of maternal shift work on child outcomes focuses on negative outcomes. The evening shift has been singled out as particularly problematic when the children are school aged (Heymann, 2000). The argument is that mothers who work nonstandard shifts experience adverse well-being outcomes that may directly or indirectly have negative impacts on their children's well-being (Han, 2005). Although this portrayal may be accurate among families headed by single mothers, it does not seem

to be true among dual-earner families. Based on the findings of the current study, it appears that fathers in families with mothers who regularly work evening shifts are more involved with their children in various ways than are fathers in families with mothers who regularly work day shifts. To the extent that father involvement is a predictor of positive child outcomes, then children in these families are advantaged.

It is possible that evening-shift mothers may be paying a price (in personal strain or in strain on their marriages) for making up their time and involvement with kids at other times during the week. Indeed, previous research (Presser, 2003) suggests that evening shift work may have negative effects on marital satisfaction. However, in another analysis with the current sample (Barnett, Gareis, & Brennan, *in press*), there was no evidence that mothers' work hours or shift schedule affected either their or their husbands' marital-role quality.

Among the positive outcomes of shift work that should be included in future studies are support, cooperation, and increased paternal time and engagement with school-age children. As we and others have shown, father involvement has beneficial effects on child outcomes. Previous research has shown that it also has positive effects on fathers themselves (Baruch & Barnett, 1981). Other studies suggest another possible benefit: When fathers are more involved in childrearing, their wives evaluate their marriages more positively (Ozer, Barnett, Brennan, & Sperling, 1998) and their marriages are more stable (Kalmijn, 1999).

It is important to note that most of the RNs in the current study chose to work their shifts. However, RNs are not typical of the majority of shift workers, who are concentrated in low-paying jobs in the service sector. For this large group of workers, the demands of the job, not their preferences, determine their work schedules. It is not possible to say how our results would be affected under such conditions.

Like other studies, the current study has several limitations. Most important, in contrast to most mothers who work nonstandard shifts, the mothers in the current study were older, better educated, and married. On average, young, low-income, less educated, and single mothers are more likely than their counterparts to work nonstandard hours (Presser & Cox, 1997). Thus, the findings of the current study may not generalize to families in which the mother works nonstandard hours but is not a RN. Moreover, we limited our sample to mothers who were working either days or evenings. We excluded mothers working nights because that schedule is less disruptive of parent-child interactions. We also excluded mothers working rotating shifts because of the complexity of those schedules and the difficulty of locating a sample

of mothers who worked the same rotating schedule. Future research should include mothers who work these other nonstandard schedules.

Future research should also estimate the relationship between fathers' nonstandard shift schedules, mothers' and fathers' parenting behaviors, and children's socioemotional outcomes. In the present 24/7 economy, mothers and fathers will increasingly be working nonstandard shifts, and it is crucial that we understand the effects on children's socioemotional well-being, regardless of which parent is the nonstandard shift worker. In addition, we need to study these linkages among single parents who work nonstandard shifts; single parents are a fast-growing segment of the population and of the workforce. It would also be desirable to study these relationships over time. A longitudinal data set would, for example, shed light on the reverse causality hypothesis that fathers whose children engage in fewer rather than more risky behaviors are more positively engaged with their children. Moreover, due to our sample size, we had only limited ability to estimate mediating effects. A larger sample would be desirable in future studies. Finally, it is possible that research with larger and more representative samples would find that shift work has deleterious effects on children and parents; however, at least for the current sample, the positives outweigh the negatives.

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