In a random sample of 98 full-time and reduced-hours female doctors in dual-earner couples with at least one child younger than 14, the authors ask whether objective work hours or perceived job demands better predict psychological distress and whether work hours or parent-role quality moderate the relationship between perceived job demands and psychological distress. Neither work hours nor perceived job demands predicted psychological distress, but another subjective indicator, schedule fit, did. Support was also found for family-related interaction effects; that is, good relationships with children buffered mothers from the negative effects that perceived job demands might otherwise have on psychological distress.

Under What Conditions Do Long Work Hours Affect Psychological Distress?
A Study of Full-Time and Reduced-Hours Female Doctors

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The popular press continues to pay considerable attention to the negative effects of long work hours per se on quality of life (QOL) and health outcomes (Hochschild, 1997). For example, we are told that the “time bind” is affecting all employees, perhaps especially those in long-hours professional careers (Schor, 1991). Indeed, the focus on long work hours currently dominates much research in the work-family area, in which scholars from several quarters (e.g., Garey, 1999; Harrington, 1999; Schor, 1991; Williams, 2000) suggest that reduced work hours is critical to alleviating the problems faced by most full-time-employed mothers (and increasing numbers of fathers).
who are simultaneously managing the demands of paid work and care work. Such jobs, it is argued, create more control for employees who, by virtue of limiting their work hours, are better able to fulfill personal or family responsibilities.

Yet the belief that part-time work is associated with beneficial health effects receives inconsistent empirical support from studies of QOL and mental- and physical-health outcomes: In some studies, part-time work is associated with negative health outcomes; in others, with positive outcomes; and in still others, with no effects on health outcomes (see Barnett, 1998, for a review of this literature). However, these studies have not distinguished between voluntarily and involuntarily part-time-employed workers; nor have they distinguished between professional and nonprofessional part-timers. Thus, their findings might not generalize to voluntary reduced-hours workers in the professions.

Especially in such long-hours professions as medicine, law, and management, considerable attention is being paid to initiating and promoting reduced-hour career options (Barnett & Hall, 2001; Boston Bar Association, 1999; Epstein, Seron, Oglensky, & Saute, 1997; Lee, MacDermid, & Buck, 2000). Although the creation of reduced-hours work options is often motivated by the needs of employers to limit their financial obligations to employees, it is also thought that the increased flexibility associated with these options will reduce overall levels of stress on employees, with consequent beneficial health and QOL outcomes (Buessing, 1996, 1997; Klein, Hyde, Essex, & Clark, 1998; Wethington & Kessler, 1989). The rationale is that by reducing time on the job, excessive job demands would be decreased and flexibility increased, resulting in lower distress. Yet no systematic studies have compared the psychological distress of full-time and reduced-hours female professionals with young children.

Moreover, several studies indicate that such objective job conditions as number of hours worked may be less predictive of health and QOL outcomes than are subjective indicators. For example, in a recent study of men, their perceptions of their job demands—not their work hours—were related to the quality of both their marital relationships and their relationships with their adolescent children (Crouter, Bumpus, Head, & McHale, 2001). It is important to note that some of the men in the Crouter et al. (2001) study worked more than 50 hours per week.

Other studies suggest that the relationship between objective workplace indicators and QOL and distress outcomes must be understood in the context of the quality of employees’ family lives (Hyde, Klein, Essex, & Clark, 1995; Klein et al., 1998). Employees who report that their work arrangements meet their needs and those of their family (i.e., that subjective schedule fit is good)
report no more distress if they work longer versus shorter hours (Gareis & Barnett, 2001).

Thus, the relationship between objective work conditions and distress outcomes can no longer reasonably be considered simple or straightforward. Arguably, factors other than the objective number of hours worked need to be studied. It is becoming increasingly clear that subjective perceptions of job conditions and the quality of employees’ family life affect the relationship between objective workplace conditions and distress outcomes (Barnett, Marshall, & Pleck, 1992). As yet, little is known about the conditions under which long work hours are associated with poor QOL outcomes.

In this analysis, we ask whether objective work hours per se or subjective indicators (i.e., perceptions of job demands) are the more powerful predictor of psychological distress in a sample of female professionals. We also ask whether work hours moderate the relationship between perceived job demands and psychological distress and whether parent-role quality moderates the relationship between work conditions such as perceived job demands and psychological distress. We address these questions in a random sample of 98 married female doctors who are in dual-earner couples, who vary in work schedule (i.e., full-time versus reduced-hours), and who have at least one child younger than 14 years of age.

LITERATURE REVIEW

The predominant paradigm in the job stress-illness literature, the Job-Strain model, posits that excessive demands on the job are a major cause of stress-related mental- and physical-health outcomes. This model emphasizes objective job conditions, such as number of hours worked, and neglects the role of subjective indicators, such as perceived job demands, in predicting health outcomes. Previous research suggests that such subjective indicators are better predictors of distress outcomes than are objective work hours per se (Barnett & Gareis, 2000a, 2000b; Barnett, Gareis, & Brennan, 1999; Crouter et al., 2001; Hyde et al., 1995; Klein et al., 1998; Perry-Jenkins, Repetti, & Crouter, 2000).

The linkage between perceived job demands and psychological distress has been established both cross-sectionally and longitudinally (Barnett & Brennan, 1995, 1997). Among full-time employees in dual-earner couples, this subjective indicator was significantly associated with distress for both women and men. However, no previous study has estimated this relationship in a sample of both full-time and reduced-hours employees. This is an important limitation because it may be the case that the relationship between
perceived job demands and psychological distress is moderated by the number of work hours, such that under conditions of high job demands, those who work longer hours report higher psychological distress than those who work shorter hours.

Moreover, the substantial literature on spillover suggests that workplace stressors affect nonworkplace variables (and vice versa), which then affect distress outcomes. For example, Barnett and Marshall (1992) found that poor job-role quality exacerbated the relationship between child-care burden and psychological distress among employed married mothers. Thus, the effects of perceived job demands on distress may be moderated by such nonworkplace stressors as poor parent-role quality.

To estimate the relationships of interest, it is important to control for schedule fit, defined as the degree to which one’s work schedule (i.e., the number and distribution of work hours) meets one’s own needs as well as the needs of one’s partner, children, and other dependents (Barnett et al., 1999). Previous studies indicate that poor schedule fit is related to psychological distress. For example, in a previous analysis with the present sample, schedule fit predicted psychological distress, life satisfaction, burnout, job-role quality, and marital-role quality, whereas work hours per se predicted none of these outcomes (Gareis & Barnett, 2001). Furthermore, a study of physicians married to other physicians suggests that women medical doctors who work reduced hours might be sacrificing career for family (Hinze, 2000). To the extent that this is identity discrepant (Thompson & Bunderson, 2001), such sacrifice might be experienced as poor schedule fit.

In sum, despite the heavy focus on work hours in the job stress-illness literature, scant systematic evidence exists comparing full-time and reduced-hours professionals on indicators of psychological distress, and the evidence that does exist linking reduced hours to decreased distress is inconsistent. Three possible reasons for the failure of objective work arrangements such as number of work hours to consistently predict symptoms of psychological distress are that (a) other variables reflecting more subjective aspects of work, such as perceived job demands, are better predictors of distress than are objective work arrangements per se; (b) the relationship between those subjective work variables and psychological distress might be moderated by objective work arrangements (e.g., work hours); or (c) the relationship between those subjective work variables and psychological distress might be moderated by the quality of family life (e.g., parent-role quality).

We explore these possibilities in a random sample of 98 married female doctors who are in dual-earner couples, who have at least one child younger than 14 years of age, and who vary in work hours. We estimate the main-effect associations of objective work arrangements and perceived job
demands with psychological distress. We then estimate separately the two-way interaction effect of work hours and the two-way interaction effect of parent-role quality on the relationship between perceived job demands and psychological distress. We test the following three hypotheses:

1. Perceived job demands will be a better predictor of psychological distress than will objective number of hours worked.
2. The relationship between perceived job demands and psychological distress may be moderated by work hours.
3. The relationship between perceived job demands and psychological distress may be moderated by the quality of the doctor’s relationship with her child(ren) (i.e., parent-role quality).

In all analyses, we control for negative affectivity (NA), a mood-dispositional trait to view the world negatively that is thought to account for spuriously high correlations between self-report measures of predictor and outcome variables, especially in cross-sectional analyses (Brennan & Barnett, 1998; Burke, Brief, & George, 1993). Because reduced-hours doctors earn lower incomes than do their full-time counterparts, and because reduced hours is usually only an option for those workers whose partners earn enough money to offset the consequent reduction in income, we also control for household income in all analyses. Work hours may also be associated with number of years in practice and with having a medical specialty; therefore, we control for these factors as well.

METHOD

PARTICIPANTS

The participants were stratified on work schedule and varied in race/ethnicity. The sample was drawn randomly from the registry of the Board of Certification in Medicine, which licenses all doctors practicing in the Commonwealth of Massachusetts. To ensure that we had sufficient power to detect race/ethnicity effects, if any, we oversampled from among minority doctors. Data were collected between September 1999 and March 2001.

Conventional definitions of part-time work are not helpful in distinguishing between full-time and reduced-hours professionals. For example, the Bureau of Labor Statistics defines anyone working less than 35 hours per week as working reduced hours. In our experience interviewing doctors, we found that many consider themselves—and are considered by their colleagues and employers—to be working reduced hours even when they...
actually work 35 or more hours per week. For the purposes of this study, doctors were considered to be working reduced hours if their employing organizations defined them as such.

Although the sample was stratified on full-time versus reduced hours, we treat number of work hours per week as a continuous variable because there was considerable overlap between the actual number of hours worked by the two groups. For example, some 23.4% of the doctors in our sample who were considered by their employers to be on reduced-hours schedules worked more than 35 hours per week.

Our goal was to interview 50 full-time and 50 reduced-hours doctors, with each group comprising half minority and half White doctors. However, both minority doctors and reduced-hours doctors were harder to locate than were their White and full-time counterparts. We expanded our sampling strategy by asking participants to nominate other eligible doctors and by asking eligible doctors to volunteer; these efforts resulted in only 6 additional participants. Based on the literature indicating that after controlling for education, race may not have a main effect (e.g., Kessler & Neighbors, 1986), we filled the minority reduced-hours doctor cell with White reduced-hours doctors.

The final sample consisted of 51 full-time doctors (26 White and 25 minority doctors) and 47 reduced-hours doctors (33 White and 14 minority doctors) ($N = 98$). The completion rate among the 92 doctors obtained via random sampling was 49.5%. Because those who refused were generally unwilling to provide us with demographic data, we are not able to determine whether there was any response bias. As discussed above, an additional 6 respondents were volunteers or were nominated by other doctors as eligible.

**PROCEDURES**

Trained interviewers conducted 60-minute face-to-face interviews at a time and place convenient to each participant. In addition, each participant was mailed a brief questionnaire to be completed in advance and returned at the time of the interview. The interview and mailed survey covered various objective and subjective aspects of participants’ jobs (e.g., salary, number of hours worked, career satisfaction, schedule fit) as well as the quality of their major social roles (spouse, parent, employee) and various QOL indicators. Each doctor received $25 for her participation.

**MEASURES**

We measured psychological distress by asking respondents to indicate on a 5-point scale from 0 (not at all) to 4 (extremely) how often in the past week
they were bothered by each of 10 symptoms of anxiety and 14 symptoms of depression (Derogatis, 1975). Anxiety and depression scores were combined to create a measure of psychological distress (Barnett, Marshall, Raudenbush, & Brennan, 1993). Scores can range from 0 to 96. Cronbach’s alpha was .90 in the present sample.

We assessed perceived job demands using a three-item measure (Barnett & Brennan, 1995) on which respondents were instructed to think about their job as it is right now and to indicate on a 4-point scale from 1 (not at all) to 4 (extremely) to what extent each of the following three items was currently of concern: “having to juggle conflicting tasks or duties,” “having too much to do,” and “the job’s taking too much out of you.” Responses are summed and then averaged, so that total scores can range from 1 to 4. Cronbach’s alpha in this sample was .75.

We measured parent-role quality using a 44-item measure (Barnett, Brennan, & Marshall, 1994). Respondents indicated on a 4-point scale from 1 (not at all) to 4 (extremely) the degree to which each item was currently rewarding or of concern. Concern items were negatively weighted and reward items positively weighted in constructing the role-quality score, which was the weighted average of the item scores; role-quality scores can range from –3.0 to 3.0. In this sample, Cronbach’s alpha for the parent-reward items was .92; for the parent-concern items, it was .83.

We assessed schedule fit using an 11-item measure (Barnett et al., 1999) asking respondents to assess on a 7-point scale from 1 (extremely poorly) to 7 (extremely well) how well the number and distribution of their work hours and the flexibility of their work schedule met their needs. They were also asked to rate how well their own and their partner’s schedules met their own, their partner’s, their children’s, and if applicable, their elderly dependents’ needs. Responses are summed and then averaged, so that total scores can range from 1 to 7. Only 17 participants had elderly dependents. Cronbach’s alpha ranged from .71 for the 11-item scale to .81 for the 9-item scale that omitted the 2 items concerning elderly dependents.

We assessed negative affectivity (NA) using the Trait Anxiety Scale (Spielberger, 1983), a 10-item frequency-of-feelings scale that is a recognized measure of the NA construct (Watson & Clark, 1984). Internal consistency is high, with a Cronbach’s alpha of .90 in this sample.

We assessed work hours by asking respondents to estimate the number of hours worked in an average work week and years as a doctor by asking doctors how long they had been employed as physicians rounded to the nearest whole year. We calculated household income per capita by dividing each respondent’s report of yearly household income by the number of people living in the household. Because the distribution of this variable is highly
skewed, we used the natural log of per capita income in all analyses. Medical specialty, as opposed to general practice and surgical specialties, was operationalized as a dummy variable (1 = medical specialty, 0 = else).

RESULTS

DESCRIPTIVE FINDINGS

On average, the reduced-hours doctors worked 32.1 hours per week \((SD = 7.8)\) and the full-time doctors worked 48.7 hours per week \((SD = 9.8)\); on average, they had been working these schedules for approximately \(5\frac{1}{2}\) years \((M = 67.6\) months, \(SD = 58.9\) months). Overall, the women averaged 40.2 years of age \((SD = 5.1)\), had been practicing medicine for 10.2 years \((SD = 6.1)\), had two children \((median = 2.0, SD = 1.0)\), and had a median household income of $200,000 \((SD = 144,438)\).

No significant mean differences were indicated by \(t\) tests between full-time and reduced-hours women doctors on any of these demographic variables except for time on schedule. Specifically, full-time doctors had worked full time for more than 7 years, on average, whereas reduced-hours doctors had worked reduced schedules for about 4 years, on average. Full-time and reduced-hours doctors did not differ significantly on any of the study variables; that is, parent-role quality, perceived job demands, or psychological distress.

The correlations between the study variables are presented in Table 1. Not surprisingly, the perception that job demands were heavy was significantly correlated with poor schedule fit, poor parent-role quality, and high

<table>
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<tr>
<th>TABLE 1: Intercorrelations Between Measures</th>
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<tr>
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<tr>
<td>1. Work hours</td>
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<tr>
<td>2. Perceived job demands (.14)</td>
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<tr>
<td>3. Household income (.19)</td>
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<tr>
<td>4. Years as a doctor (.09)</td>
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<td>5. Medical specialization (.18)</td>
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<tr>
<td>6. Negative affectivity (-.09)</td>
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<tr>
<td>7. Schedule fit (-.20^*)</td>
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<td>8. Parent-role quality (-.00)</td>
</tr>
<tr>
<td>9. Psychological distress (.03)</td>
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</tbody>
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\(\text{NOTE: } N = 98. \text{ For medical specialization, } 1 = \text{ medical specialty, } 0 = \text{ else.}\)

\(^*p < .05. \quad ^{**}p < .01. \quad ^{***}p < .001.\)
psychological distress, which themselves were intercorrelated in the expected directions. That is, poor schedule fit was associated with poor parent-role quality and high psychological distress; and poor parent-role quality was associated with high psychological distress. In this sample, longer work hours also predicted lower ratings of schedule fit. Moreover, negative affectivity was correlated with reports of high perceived job demands, poor schedule fit, poor parent-role quality, and high psychological distress, highlighting the importance of controlling for NA. Finally, years as a doctor was negatively correlated with psychological distress, such that doctors who had been in practice for longer were less distressed.

**HYPOTHESIS TESTING**

To test the study’s three hypotheses, we estimated a series of direct- and indirect-effects simultaneous regression models. To test Hypothesis 1, we regressed psychological distress on two predictors (i.e., work hours and perceived job demands). The model included six controls (i.e., per capita household income, years as a doctor, medical specialization, negative affectivity, schedule fit, and parent-role quality).

Results indicated that objective work hours per se were not significantly related to psychological distress (see Table 2, Hypothesis 1). Thus, there was no significant difference in psychological distress reported by doctors who worked longer hours versus doctors who worked shorter hours. However, neither were perceived job demands significantly associated with distress. These results do not support Hypothesis 1, but the absence of a significant relationship between number of hours worked and psychological distress does challenge predictions based on the Job-Strain model.

Importantly, subjective schedule fit, a control variable, was a significant predictor of psychological distress. Women doctors who reported better schedule fit also reported lower psychological distress. Thus, regardless of the number of hours worked per se, subjective schedule fit appears to be the more critical variable in predicting symptoms of psychological distress.

We tested Hypothesis 2 by adding the interaction term Work Hours × Perceived Job Demands to the main-effects model described above. The interaction was not significant, indicating that the results did not vary by objective work schedule (see Table 2, Hypothesis 2). Thus, number of work hours did not moderate the relationship between perceived job demands and psychological distress. These findings do not support Hypothesis 2.

To test Hypothesis 3, we added the interaction term Parent-Role Quality × Perceived Job Demands to the main-effects model described above. There was a significant interaction effect of parent-role quality on the relationship
### TABLE 2: Regression of Psychological Distress on Perceived Job Demands, Work Hours, and Parent-Role Quality

<table>
<thead>
<tr>
<th>Hypothesis 1</th>
<th>Hypothesis 2</th>
<th>Hypothesis 3</th>
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<tr>
<td><strong>B</strong></td>
<td><strong>β</strong></td>
<td><strong>SE</strong></td>
</tr>
<tr>
<td>Work hours</td>
<td>0.01</td>
<td>.02</td>
</tr>
<tr>
<td>Perceived job demands</td>
<td>1.22</td>
<td>.10</td>
</tr>
<tr>
<td>Household income</td>
<td>0.42</td>
<td>.01</td>
</tr>
<tr>
<td>Years as a doctor</td>
<td>-0.32**</td>
<td>-.22</td>
</tr>
<tr>
<td>Medical specialization</td>
<td>1.26</td>
<td>.07</td>
</tr>
<tr>
<td>Negative affectivity</td>
<td>9.40***</td>
<td>.45</td>
</tr>
<tr>
<td>Schedule fit</td>
<td>-1.62*</td>
<td>-.18</td>
</tr>
<tr>
<td>Parent-role quality</td>
<td>-2.59*</td>
<td>-.17</td>
</tr>
<tr>
<td>Perceived Job Demands × Work Hours</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Perceived Job Demands × Parent-Role Quality</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>$R^2$</td>
<td>.52</td>
<td>.52</td>
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**NOTE:** N = 98.

*p < .05. **p < .01. ***p < .001.
between perceived job demands and psychological distress (see Table 2, Hypothesis 3). The inclusion of this interaction term in the model explained a significant proportion of the variance over and above that explained by the main-effects model, \( F(1, 88) = 4.39, p < .05. \)

Women doctors who had poor relationships with their children were more reactive to perceived job demands; that is, high perceived job demands were associated with higher levels of psychological distress for these parents than were high perceived job demands for their counterparts with better relationships with their children (see Figure 1). It seems that good relationships with children buffered women doctors from the psychological distress they would otherwise experience due to perceptions of excessive job demands. Thus, it is not possible to understand the linkage between perceived job demands and psychological distress without knowing the quality of the relationships married female medical doctors have with their children. Importantly, in this model, the main effect of parent-role quality was not a significant predictor of psychological distress. In other words, once perceived job demands was entered into the model, it reduced the significance of parent-role quality as a predictor.

**DISCUSSION**

In sum, in this random sample of full-time and reduced-hours female doctors in dual-earner couples with at least one young child, we found support
for the presence of family-related interaction effects. That is, good relationships with their children helped to buffer these mothers from the negative effects that perceived job demands might otherwise have had on their psychological well-being.

Although we found no support for the hypothesis that the direct effect of perceived job demands would be a more powerful predictor of psychological distress than would objective work hours, we did find limited support for the predictive power of another subjective indicator, schedule fit. Objective work hours were not significantly associated with distress, a finding of particular interest given that study participants were married women professionals with young children—a group that is presumably under great time pressure and among whom longer work hours might be expected to have very negative effects on distress outcomes. This finding underscores the importance of assessing subjective aspects of working reduced hours, especially in professions that esteem long work hours and total commitment, and meshes well with research suggesting that working one’s preferred shift/schedule is associated with positive outcomes (e.g., Morrow, McElroy, & Elliott, 1994).

**CONCLUSION**

These findings suggest that the quality of family relationships must be taken into account in assessing the linkages between workplace stressors and psychological distress. Thus, dominant models in the job stress-illness literature that focus exclusively on employees as workers are inadequate for understanding psychological distress among women professionals with families. Prior research suggests that this caveat should apply equally to men professionals with families (for a review, see Barnett & Hyde, 2001).

The importance of schedule fit as a predictor of psychological distress suggests that employers focus less on the number of work hours in crafting employee policies and concentrate more on optimizing schedule fit. This strategy may yield more beneficial results, at least with respect to reducing psychological distress.

Because this study is cross-sectional, we are unable to rule out the possibility of reverse causation; for example, perhaps mothers’ psychological distress interferes with their ability to maintain positive relationships with their children. Longitudinal studies are necessary to disentangle the direction of these effects. Another useful direction for further research would be to determine whether these findings might also generalize to other women and to men professionals with families. Another might be to examine other
subjective indicators, for example, the rewards and concerns associated with reduced-hours schedules (Barnett & Gareis, 2000b).

Finally, this study was conducted on an American sample. Future research is needed to determine whether the results would generalize to professionals in other cultures in which long work hours may not be as normative for professionals as they are in the United States (Perlow, 2001; Wharton & Blair-Loy, 2002).

REFERENCES


