

Effects of Daily Stress at Work on Mothers' Interactions With Preschoolers

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Thirty mother–preschooler dyads were studied for 5 consecutive weekdays. In addition to daily maternal reports of job stressors and parent–child interaction, a subsample of 13 dyads was videotaped during the parent–child reunion at the end of each workday. Mothers were much more likely to respond to an increase in job stressors by withdrawing than by becoming more irritable. Both mothers and independent observers described mothers as more behaviorally and emotionally withdrawn (e.g., less speaking and fewer expressions of affection) on days when the mothers reported greater workloads or interpersonal stress at work. Job stressors may have their strongest impact on the daily parenting behavior of mothers who generally experience higher levels of emotional distress (depressed or anxious mood) and, in particular, mothers who report more Type A behaviors.

Patterns of interaction between family members change from day to day, often in quite significant ways. For example, why is it that on some days a parent is more easily provoked to scold her or his child or is moved to greater compassion? Many theorists maintain that families are best understood within the context of their broader environments or ecologies (Belsky, Steinberg, & Draper, 1991; Bronfenbrenner, 1989). This study focused on a parent's employment situation as one important aspect of a family's ecology that may influence day-

to-day changes in parent–child interaction. Parental employment is a good starting point for this type of investigation for several reasons. First, for most children in the United States, any parent present in the home is also a member of the paid labor force (U.S. Bureau of the Census, 1991a, 1991b). For these children, there is no parent in the household who is not exposed to the daily rewards and daily strains of a job. Second, because daily experiences at work, particularly stressors, have a profound impact on adults' well-being and other aspects of their behavior (Repetti, 1993a, 1993b), it seems likely that they would also shape parents' interactions with their children. Finally, unlike many other stressful events in a parent's daily life, such as family arguments, experiences at work typically take place independent of child behavior. One can more directly investigate the impact of stressful events on parenting when it is unlikely that the child was a direct contributor to the stressful episode.

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Chronic Stress and Parenting

Exposure to chronic stress appears to result in more dysfunctional families and parent–child dyads (Belsky et al., 1991; Repetti & Wood, in press). For example, mothers who have less supportive and more stressful interpersonal relationships tend to have a less sensitive and more intrusive style of interaction with their

preschool children (Jennings, Stagg, & Connors, 1991; Pianta & Egeland, 1990). There is also evidence of less optimal family functioning when mothers report more daily hassles associated with parenting (Crnic & Greenberg, 1990). Employment stressors, in particular, have also been studied for their possible impact on parenting behavior. Parents who are exposed to chronically high levels of job stress appear to be less involved and more controlling with their children, and social relations in their families are characterized by more conflict and less cohesion (Daniels & Moos, 1988; Grossman, Pollack, & Golding, 1988; Piotrkowski & Katz, 1983; Repetti, 1987). The work-family literature is becoming increasingly sophisticated, incorporating more differentiated descriptions of jobs and parent-child dyads, and there is a less exclusive reliance on parents' self-reports. For example, in Greenberger, O'Neil, and Nagel's (1994) study, both independent assessments and self-reports of different parent job characteristics were related to observational measures of parenting style.

Short-Term Effects of Common Daily Stressors on Parenting

Our understanding of how stress influences parenting may be advanced by a combination of between-subjects research designs, which compare parents living under different levels of chronic stress, and within-subjects designs, which examine stress-induced changes in behavior that can be observed within the same parent or family over relatively short periods of time. The latter studies usually focus on day-to-day fluctuations in parenting behavior. A small clinical literature, based on observations of mother-child dyads in which child behavior problems have been identified, supports the commonly held belief that parents are more irritable on stress-filled days. Using a case study approach with 5 mother-child dyads, Patterson (1983) identified two patterns of behavior associated with an increase in daily hassles reported by mothers. Two mothers became more irritable with their children, and one mother became less irritable, on days with more minor stressful events. In a similar study, Dumas (1986) conducted home observations with 14 mother-child dyads who had been referred for therapy. He found that, regardless of the behavior exhib-

ited by the child, mothers behaved more aversively toward the child on days in which they reported more aversive social contacts with other adults. Snyder (1991) found that mothers were more likely to react to negative child behaviors with aversive responses when they reported more hassles (i.e., minor, but unpleasant, events occurring outside of the family) over the previous 48 hr.

Using a nonclinical sample, Margolin, John, and Burman (1993) collected daily-report data from 133 families and examined whether parents' reports of interpersonal stressors that occurred outside of the home were linked to their perceptions of their preadolescent children's behavior at home. Daily increases in parent stressors were linked with reports of more negative and less positive child behavior. To the extent that the parents' descriptions of their children reflected the quality of parent-child interactions that day, the results suggest that increases in parent daily stressors are associated with more aversiveness in the parent-child dyad. Thus, in research with both clinical and nonclinical samples, common daily stressors tend to be linked with short-term increases in aversive parent-child interactions.

Daily Job Stressors and Parents' Behavior

This article addresses the short-term effects of an increase in job stressors on a parent's behavior. We focus on two categories of daily job stressors, workload and negative social interactions with coworkers and supervisors, both of which have an impact on a worker's psychological well-being and physical health (Repetti, 1993a). Previous research has identified three types of social responses to these stressors: behavioral withdrawal, emotional withdrawal, and negative emotion spillover.

Repetti (1989, 1992) has suggested that social withdrawal may be a common strategy used by adults to cope, in the short run, with certain types of stressors. In particular, experiences that increase negative affect, arousal, and fatigue, such as psychological overload, may lead to social withdrawal. This coping response results in a pervasive reduction in social involvement that can be observed as a decrease in both the amount of social interaction (behavioral withdrawal) and in emotional responsiveness (emotional withdrawal). The change in responsive-

ness may include less expression of all emotion, both positive and negative. In a study of male air traffic controllers, Repetti (1994) found that after a more demanding day at work, fathers tended to be more behaviorally and emotionally withdrawn during interactions with their school-aged children. The emotional withdrawal findings were confirmed with objective measures of daily workload. The first hypothesis tested in this study therefore predicted that daily increases in perceived workload would be associated with a same-day emotional and behavioral withdrawal during parent-child interactions.

In the work-family literature, the term *negative emotion spillover* is sometimes used to refer to a process whereby feelings of frustration, anger, or disappointment at work lead to greater irritability and impatience or more power assertion at home (Bolger, DeLongis, Kessler, & Wethington, 1989; Crouter, Perry-Jenkins, Huston, & Crawford, 1989; Hoffman, 1986). There was evidence in the just-mentioned air traffic controller study of negative emotion spillover. On days when they reported more distressing interactions with coworkers and supervisors, the fathers also reported increases in expressions of anger and use of discipline (Repetti, 1994). Studies focusing on marital interaction yield similar results. Daily increases in job stressors tend to be associated with more negative marital behavior, such as more arguments (Bolger et al., 1989; Crouter et al., 1989). These findings are similar to the research mentioned earlier in which common daily stressors tended to be linked to short-term increases in aversive parent-child interactions. The second hypothesis therefore predicted that daily increases in distressing social interactions with coworkers and supervisors at work would be associated with a same-day spillover of negative feelings, resulting in increased aversiveness during parent-child interactions.

In the air traffic controller study, social stressors at work seemed to lead not only to the fathers' greater use of discipline and more negative feelings but also to less behavioral involvement with children and greater marital withdrawal (Repetti, 1989, 1994). In the present study as well, we expected a reduction in the total amount of behavioral involvement (i.e., behavioral withdrawal) on high social stress days. However, we expected the affective quality of parent-child interactions to be dominated

by the negative emotion spillover effect. The third hypothesis predicted that daily increases in distressing social interactions with coworkers and supervisors would also be associated with a same-day behavioral withdrawal during parent-child interactions. Thus, according to our hypotheses, social stressors and workload would have different effects on parent behavior.

Individuals certainly differ in the degree to which they react to common daily stressors. For example, research on maternal depression suggests that the behavior of depressed mothers, in comparison with that of nondepressed mothers, is more affected by situational cues (Kochanska & Kuczynski, 1991). Their dysfunctional parenting behaviors appear to be especially reactive to demanding or stressful situations (Brenzitz & Sherman, 1987; Hops et al., 1987). Another line of research suggests similar individual differences in the manner in which common everyday stressors are linked to short-term changes in subjective well-being: For example, problems in daily life are more closely tied to day-to-day fluctuations in well-being among adults with low self-esteem, adults with high levels of chronic negative affectivity (or neuroticism), and those who receive little emotional support from their social networks (DeLongis, Folkman, & Lazarus, 1988; Marco & Suls, 1993). Bolger and Schilling (1991) followed more than 300 married adults for 6 consecutive weeks and found that those who scored high on a neuroticism scale reacted with significantly greater emotional distress to overloads at work and interpersonal conflict. We therefore expected that psychological distress, as indicated by reports of depressed and anxious mood, would potentiate the effects of job stressors on parenting behavior. We also expected parents who reported more of the classic symptoms of the Type A behavior pattern (a sense of time urgency, competitiveness, and being easily upset) to react more strongly to daily increases in stressors at work. The fourth hypothesis tested in this study predicted that the association between day-to-day changes in employment conditions (workload and the quality of interactions with coworkers and supervisors) and daily parenting would be moderated by individual psychological functioning; parents reporting more psychological distress or more Type A behavior were expected to be more reactive to daily job stressors.

The Present Study

This study used mothers' perceptions and daily observations of mother-child dyads to test the reliability and generalizability of earlier findings, primarily results from Repetti's (1994) study of air traffic controllers. First, the study attempted to replicate the previous findings in a sample of employed mothers with demographic characteristics very different from those of the generally high-income Caucasian men who made up the air traffic controller sample. Many of the mothers in the present study were ethnic-minority single parents, and many had low family incomes.

Second, most of the existing studies relating daily job conditions to day-to-day changes in behavior at home were based on ratings of job events and home behavior made at a single point in time, at the end of each day. A limitation of this procedure is that the parent's frame of mind or mood at the time that the form is completed may induce or exaggerate a correlation among the ratings on that form. Of particular importance here, parents' recall of events that occurred earlier in the day (at work) may be contaminated by their current emotional reaction to the child. This study attempted to replicate previous findings with ratings of daily job stress and parent-child interaction completed at different points during the day. By separating, in time, the parents' ratings of conditions at work from their descriptions of their behavior at home, we reduced possible confounding. In particular, we completely eliminated the possibility that interactions with the child at home could have influenced the mothers' ratings of events earlier at work.

Third, we also tested whether the previously reported findings were dependent on the use of parents' perceptions to assess parent-child interactions. For a subset of the sample, supplementary data were collected by videotaping parent-child interactions during the parent-child reunion at the end of the mother's workday. Previous research has shown that there are large variations in mother-child reunions at child-care settings on different days (Howes & Hamilton, 1992). Independent observers' ratings of daily maternal behavior in the videotapes allowed us to test whether day-to-day changes in parent behavior during the reunion episodes were related to mothers' perceptions of stressors that had occurred earlier at work.

Finally, this study explored a new issue: the identification of individual differences in short-term behavioral reactions to daily job stress. Psychological distress and Type A behavior were tested as individual-difference moderator variables that could potentiate the short-term behavioral impact of job stressors.

Method

Design and Procedure

Parent-child dyads were recruited through four work-site child-care centers. The study focused on intrasubject variability, comparing each mother with herself from one day to the next and relating changes in her parenting behavior to earlier changes in stressors at work. In particular, we examined same-day behavioral responses to increases in two common stressors at work: overload and distressing social interactions with coworkers and supervisors. Daily parent-child interaction was assessed by parent reports and by videotapes of daily play sessions. Each mother-child dyad was studied for 5 consecutive days. Before being reunited with her child at a work-site child-care center, the mother completed a measure of perceived job stressors that day. Later, before going to bed, she completed a scale describing interactions that occurred with her child that evening after work.

Only one of the four centers permitted daily videotaping of parent-child reunions. At that center, mother-child dyads were videotaped during 10-min play periods at their reunion each evening. The daily reunions took place in a room with a table, two chairs, and some age-appropriate toys. When child care is provided at a work site, employed parents have little opportunity to unwind before seeing their child at the end of a difficult day. We reasoned that, under these circumstances, the reunion period would be especially vulnerable to any effects of job stress. The daily videotaped interactions were therefore expected to most clearly demonstrate the immediate effects of an increase in job stressors.

About 2 weeks after the week of daily participation, parents completed questionnaires sent to them in the mail that included measures of the individual-difference moderator variables. Families were paid \$50 for their participation in the study.

Sample

The four work-site child-care centers were located in two metropolitan areas in the northeastern United States. Each center was affiliated with a large employer organization. The target children for the study were preschoolers (3-6 years old) enrolled full time

in the child-care program. The parent who picked up the child at the center at the end of each day was designated as the target parent for the study.

Parents of all preschool-aged children enrolled full time at each of the four centers (total $n = 139$) were sent a letter inviting them to participate in the study. Forty-one parent-child dyads (30%) actually completed the study. A larger number of families (48, or 35% of the total) agreed to participate. However, 7 interested families were absent during the weeks of data collection at their center. Sufficient daily-report data (i.e., both job stress and parent-child interaction ratings) were available from 34 of the 41 participating dyads. This article focuses on daily data from the 30 mother-child dyads. Data from an additional 4 father-child dyads were dropped from the analyses reported here (except scale development and other psychometric analyses.¹)

The 30 target children (14 boys and 16 girls) ranged in age from 3 to 6 years ($M = 4$ years, 3 months). Their mothers were employed in a variety of white-collar, primarily clerical, occupations. Almost half were employees of the federal government; most of the other mothers worked either in a medical center or for a large private corporation. Most of the mothers (79%) had at least some college education, and their average household income was between \$30,000 and \$40,000 in 1989-1990. Annual income for a significant minority of the mothers (29%) was below \$20,000. (Of the 28 mothers who reported income, 7 reported between \$15,000 and \$20,000, and 1 reported an income between \$10,000 and \$15,000.) Half of the mothers were African American or Latina ($n = 15$), and 12 were Caucasian (3 were missing data on ethnicity).

There were 13 mother-child dyads at the child-care center in which daily reunion episodes were videotaped (data from 2 father-child dyads were not included in the analyses reported here). Almost all of these mothers worked for the federal government, and most had at least some college education. The average household income was between \$25,000 and \$30,000. In comparison with the participating mothers at the other three centers, those from the center in which daily reunions were videotaped were more likely to be ethnic-minority single parents and to have a lower socioeconomic status. Specifically, the videotaped mothers were more likely to be African American or Hispanic (77% vs. 33%), were less likely to be married (23% vs. 67%), were less likely to have a total household income above \$30,000 (23% vs. 80%), and were less likely to have graduated from college (15% vs. 47%). Despite these differences, the two subsamples (videotaped and non-videotaped dyads) were very similar in other ways. All but 1 of the mothers in each of the subsamples had only 1 or 2 children living at home. The 7 daughters and 6 sons who made up this sub-sample of target children ranged in age from 3 to 5 years ($M =$

3 years, 8 months). Most important, there were no differences between the two subsamples on any of the measures described next, including personality and psychological well-being scores and daily reports of job stressors and parent-child interaction.

Measures

Daily job stressors. On each of the 5 days, parents described two occupational conditions: perceived workload and the quality of social interactions with coworkers and supervisors. Both measures were based on scales used in an earlier study in which the scales were found to correlate with self-reports of daily marital and parenting behavior (Repetti, 1989, 1994). Parents used 4-point response scales to rate the accuracy of a series of statements describing conditions at work that day. The factor-based measure of daily workload was a five-item subjective rating of the amount and pace of workload that day ($\alpha = .87$); for example, "There were more demands on my time than usual," "I felt like I barely had a chance to breathe," and "It was a fairly slow day" (reverse scored).

There was one measure of daily negative social interactions at work completed each day, a 32-item scale in which respondents used 16 adjectives to provide separate ratings of how they felt during interactions (a) with coworkers and (b) with supervisors (e.g., feeling respected, appreciated, tense, annoyed, and resentful; $\alpha = .86$). Positive adjectives were reverse scored, and ratings of interactions with coworkers and supervisors were combined into a single score. High scores indicate that more negative and less positive feelings were experienced during interactions at work that day. The measures of the two job stressor variables, daily workload and negative social interactions, were moderately correlated ($r = .26, p \leq .001$).

Mothers' daily reports of parent-child interactions. Each evening, mothers completed questionnaires describing their interactions with the target children between the time they were reunited at the end of the workday and the time the children went to bed. The questionnaire focused on two aspects of parent-child interaction: aversiveness and the parent's emotional and behavioral involvement with the child. There were two types of item wording included on the questionnaire. Half of the items asked mothers to compare "this evening" with a "typical evening," and the other half of the items required a simple true

¹ The relatively few data points contributed by the father-child dyads added some power to the factor analysis presented later, but there were not sufficient data to have significantly changed the simple factor structure that was obtained.

or false response. A factor analysis of all of the items resulted in two factor-based scales.

Daily Parent-Child Aversiveness ($\alpha = .83$) is a 9-item scale describing the parent's use of discipline and aversive patterns of parent-child interaction (e.g., "My child did not obey me until I kept after him/her," "I yelled at my child," and "Compared to a typical evening, tonight my child needed (*more/less*) reminding to do something"). Daily Parent Withdrawal ($\alpha = .90$) is a 14-item scale assessing behavioral and emotional involvement with the child (e.g., "I was too tired to interact much with my child," "Compared to a typical evening, tonight I spent (*more/less*) time talking with my child," and "Compared to a typical evening, tonight I felt (*more/less*) responsive to my child"). These two parent-child interaction scales were significantly correlated ($r = .39, p \leq .0001$).

Coding of daily videotaped parent-child interaction. Each 10-min videotaped reunion episode was randomly assigned to four different raters. The parent's behavior in each minute of the play session was independently rated by two of the raters. (The other two raters' scoring of child behavior is not included in this article.) Raters were trained until acceptable levels of reliability were reached. The coders were unaware of the parent's rating of daily job stress. For hypothesis-testing analyses, the 1-min ratings were averaged over the two raters and over the 10 min of parent-child interaction in order to characterize the entire reunion episode on each day.

The coding system included four indicators of the parent's positive emotional involvement with the child during each minute of the play session. In analyses presented later, a decrease in a mother's positive emotional involvement on a particular day (in comparison with her weekly average) was used as an indicator of emotional withdrawal. Two ratings were codes for instances of (a) communications of approval (e.g., praise) and (b) verbal or nonverbal expressions of affection (e.g., hugging). Each of these behaviors was rated on a 3-point scale (0 = *no instances of the behavior*, 1 = *one instance of the behavior*, 2 = *more than one instance of the behavior*). Levels of interrater agreement on these 1-min ratings were 85% and 80%, respectively. Two emotional involvement codes were ratings on the descriptive dimensions (a) *caring-apatetic* and (b) *loving/warm-cold/distant*. Levels of interrater agreement (within 1 point on a 5-point Likert scale) on these 1-min ratings were 97% and 95%, respectively.

The coding system also included four indicators of the parent's behavioral involvement during each minute of the daily play session; daily decreases in these ratings were used to assess behavioral withdrawal. First, the extent to which the parent's *attention* was focused on the child was rated on a 4-point scale ranging from *attention focused completely away from child* (1) to *attention focused completely*

on child (4). Second, the amount of *speaking* that the parent did was rated on a 4-point scale ranging from *did not speak at all* (0) to *31-60 seconds of parent speech* (3). Third, the amount of time that the parent was actively *engaged* in an activity with the child was rated on a 3-point scale ranging from *not at all engaged* (0) to *engaged all or almost all of the time* (2). Finally, whether the parent made any attempts to *teach*, instruct, explain, or demonstrate something to the child was rated on a 2-point scale (0 = *no attempts*, 1 = *at least one attempt*). Interrater agreement on these 1-min ratings ranged from 68% to 76%.

There was one measure of parent aversiveness, which was used to test the negative emotion spillover hypothesis. Coders rated mothers in terms of whether they were patient or *impatient*. Interrater agreement (within 1 point on a 5-point Likert scale) on this 1-min rating was 90%. A separate behavioral code for parent communications of disapproval was dropped because of very low frequencies and low interrater reliability.

All daily variables, the parent reports of job stress and parent-child interaction, and the behavioral codes from the videotaped interactions, were standardized to a mean of 0 and a standard deviation of 1.

Mother's psychological distress. The final questionnaire, which was completed about 2 weeks after the daily data had been collected, included three self-report measures of the mothers' overall psychological functioning: depression, anxiety, and Type A behavior.² However, because 2 mothers did not return the final questionnaire, these individual-difference scores were available for only 28 of the mothers. Depression was measured by the CES-D scale (Radloff, 1977), a 20-item scale that assesses symptoms of depression during the past week (participants in the present study, using a 1-4 response scale, had a mean score of 1.68 [$SD = 0.45$, range = 1.00 to 2.42]). The CES-D has been used for research with nonclinical populations and has been well validated in large-scale epidemiological studies (Radloff, 1977). Anxiety was measured by the Trait Anxiety Inventory, a 20-item trait anxiety measure (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983); participants in the present study, again using a 1-4 response scale, had a mean score of 2.00 ($SD = 0.53$, range = 1.05 to 2.90). Type A behavior was measured by the Framingham Type A scale (Haynes, Levine, Scotch, Feinleib, & Kannel, 1978). This scale

² The assessment of the individual-difference variables was intentionally separated from the daily assessments of job stress and parent-child interaction so that the ratings of psychological functioning would not be contaminated by the participants' mood during the week of daily data collection. Measures with good test-retest reliability were chosen in order to assess stable individual differences.

was chosen because it is brief and assesses most of the classic symptoms of the Type A behavior pattern (e.g., feeling "pressed for time" and getting "upset when you have to wait for anything"); participants in this study had a mean score of 15.70 ($SD = 4.10$, range = 8 to 23).

Results

Description of Multiple Regression Model

The statistical significance of the relation between each job stressor variable and each mother-child outcome (whether based on the mother's self-report or on the observers' ratings) was assessed in a multiple regression analysis of the pooled cross-sectional and time-series data. In other words, the 5 days of data from the mother-child dyads were stacked so that 5 days of data from 30 mothers were represented by 150 rows of data (and 5 days of videotape data from 13 dyads were represented by 65 rows). As described below, appropriate steps were taken in the analyses before treating each day of data as an independent observation. The general approach, described by West and Hepworth (1991) as least squares with dummy variables, is often considered the method of choice in studies involving daily-report data (cf. Marco & Suls, 1993; Repetti, 1989, 1993b, 1994; Stone, Kennedy-Moore, & Neale, 1995). The statistical model was as follows:

$$\begin{aligned}
 Y_{ij} = & (b_1 \text{SUBJ1} + \dots + b_n \text{SUBJN}) \\
 & + b_{n+1} \text{DAY1} + b_{n+2} \text{DAY2} \\
 & + b_{n+3} \text{DAY3} + b_{n+4} \text{DAY4} \\
 & + b_{n+5} X_{ij}.
 \end{aligned}$$

In this model, Y_{ij} is the mother-child outcome score for mother j on day i . The last predictor variable entered, X_{ij} , is the main predictor variable. It is a measure of perceived job stress for mother j on day i . This model was tested with each possible combination of the 2 daily job stress predictor variables (workload and negative social interactions) and the 11 parent-child outcome measures (2 of them based on mothers' daily reports and 9 based on observers' ratings of the daily videotapes). Thus, 22 (2 predictor variables \times 11 outcome variables) multiple regression analyses are reported in Tables 1 and 2.

Two types of control variables were inserted before the association between a measure of daily job stress and a measure of parent-child interaction taken on the same day was examined. First, dummy variables (SUBJ1 - SUBJN) were included to control all between-subjects variance (i.e., between-subjects effects and errors). One dummy variable, a vector of ones and zeros, was included for each subject. For example, SUBJ12 is a single vector representing Subject #12. The entries in this vector for the five rows representing data from Subject #12 were ones. All of the other entries in that vector (corresponding to rows of data from other subjects) were zeros. In analyses of mothers' self-reports of daily parent-child interaction, 30 SUBJ dummy variables were inserted (SUBJ1...SUBJ30). In analyses of observers' ratings of mothers' daily behavior, 13 SUBJ dummy variables were inserted (SUBJ1...SUBJ13) because there were 13 participating mothers at the child-care center where daily interactions were videotaped. (The inclusion of 1 dummy variable for each subject necessitated exclusion of a constant from the equation to prevent perfect multicollinearity.)

The SUBJ dummy variables controlled for each mother's tendency over the 5 days to respond to the daily-report scales in a particular way or to behave in the videotapes in a particular way. Thus, each mother's baseline levels or 5-day averages on the predictor and outcome variables were controlled before the same-day association between a job stressor and a measure of mother-child interaction was examined. In this procedure, the mother-child outcome being predicted was that particular day's deviation from the dyad's 5-day average on that variable. Similarly, the daily job stress predictor variable was also that particular day's deviation from the subject's 5-day average.

The second set of four dummy variables, DAY1, DAY2, DAY3, and DAY4, was included to control for any trends across the 5 days (i.e., differences in the association between a particular predictor and outcome variable using data collected on Days 1, 2, 3, 4, and 5 of the study). The dummy variable (vector of zeros and ones) labeled DAY1 had entries of one for all observations made on the 1st daily-report day; all of the other entries were zeros. The dummy variable or vector labeled DAY2 would be one for observations made on the 2nd daily-report day and zero otherwise, and so on. Thus,

in each of these vectors, one fifth of the entries would be ones and the remaining entries would be zeros.

The regression coefficients (betas) were estimated with weighted least squares. The weighted least squares estimation used subject-based weightings (i.e., the inverse of the standard deviation of the residuals for the individual). Thus, data from mothers with greater variability in their five daily regression residuals were accorded less weight in the regression. Weighted least squares regression was used because heteroskedastic residuals could bias the inferred significance levels of the ordinary least squares regression coefficients (although not the estimates themselves).

The relation between a measure of daily job stress and a measure of mother-child interaction was tested after all between-subjects variance (i.e., 30 or 13 SUBJ variables) and the "occasion" effect (i.e., DAY1 - DAY4) had been controlled. Of course, the degrees of freedom were also reduced accordingly. In sum, the regression model represented a pooled within-subject design exploring the occupational determinants of day-to-day fluctuations in mother-child interaction.

Reports of Job Stress as Predictors of Mothers' and Observers' Ratings of Daily Parent-Child Interaction

Table 1 reports the results of 4 multiple regression analyses relating day-to-day changes in two perceived job conditions to day-to-day changes in the mother's self-reported behavior at home with her child each evening. Table 2 reports the results of 18 multiple regression analyses testing the association between the same two measures of daily job conditions and nine observer ratings of maternal behavior (eight ratings of involvement and one rating of

aversiveness) in the daily videotapes of 13 mother-child dyads.

The first hypothesis predicted that daily increases in perceived workload would be associated with a same-day emotional and behavioral withdrawal during parent-child interactions. The result in Table 1 shows that perceived workload was a significant predictor of increased withdrawal. The left-hand bar graph in Figure 1 illustrates this finding by comparing the mean parental withdrawal ratings provided by the mothers on their 2 highest and their 2 lowest workload days. We used each mother's daily ratings to identify her 2 highest workload days and her 2 lowest workload days during the week of data collection. We then averaged, across all mothers, withdrawal scores on their 2 highest workload days and on their 2 lowest workload days. Parent behavior scores were first standardized across all days and all participants ($M = 0$, $SD = 1$). The average rating on the 2 highest workload days is depicted in Figure 1 by the left-most shaded bar. There was a high average maternal rating of withdrawal on the relatively high workload days ($M = .21$) and a low average rating of withdrawal on the relatively low workload days ($M = -.19$). The means indicate that the mothers described themselves as more withdrawn, or less behaviorally and emotionally involved, with their children on the higher workload days.

The first hypothesis was tested again with the observers' ratings of maternal behavior in the daily videotapes as outcome variables. There were eight observer ratings of involvement, four assessing the mother's behavioral involvement during the play interactions and four assessing her emotional involvement. Multiple regression results reported in Table 2 show that daily perceived workload was a significant predictor of two of the four measures of behavioral involvement and three of the four ratings of emotional

Table 1
Regressions Predicting Daily Self-Reported Parent-Child Interaction From Daily Job Stress

Outcome variable	Workload (β)	Negative social interaction (β)
Daily self-reported parental withdrawal	.22***	.32****
Daily self-reported parent-child aversiveness	.11	.04

Note. $N = 133-136$ daily reports from 30 mothers.

*** $p \leq .001$. **** $p \leq .0001$.

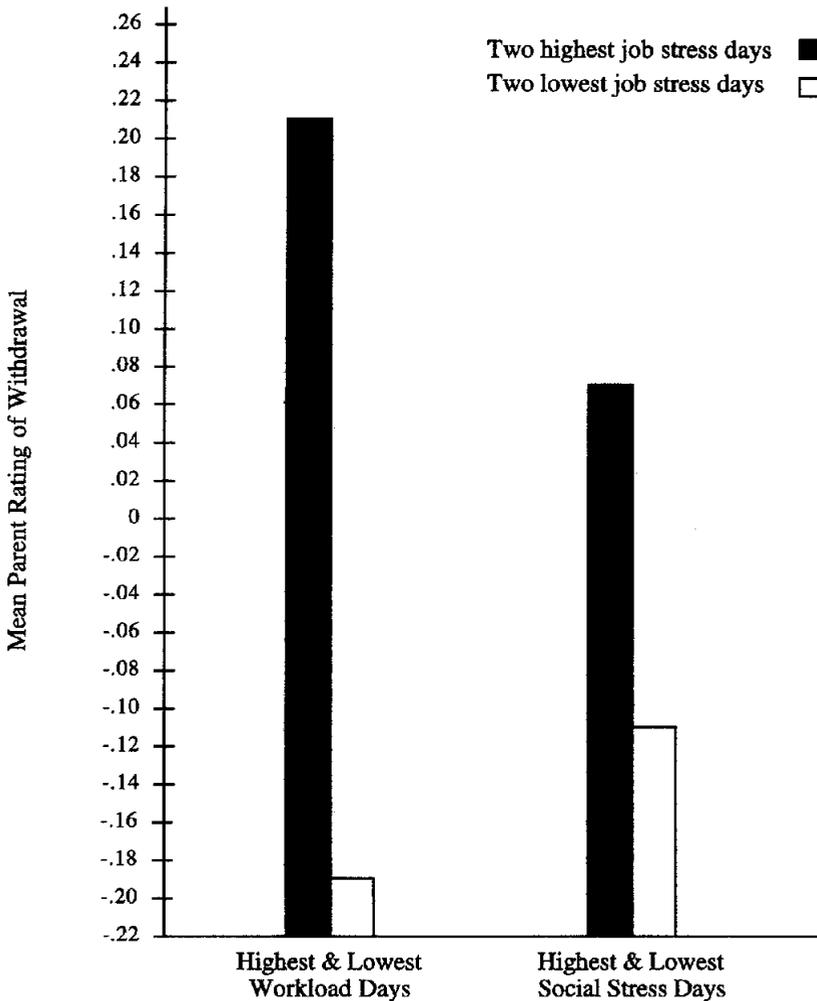


Figure 1. Average parent ratings of withdrawal on high and low job stress days.

involvement. Four of the significant betas were negative, in the predicted direction, and one was positive.

The bar graphs in Figure 2 illustrate the significant findings by comparing the mean parent behavior ratings on each mother's 2 highest workload days and her 2 lowest workload days. Ratings of parent behavior were first standardized across all days and all participants ($M = 0$, $SD = 1$). Average ratings on the 2 highest workload days are depicted by the shaded bars. As can be seen, there were low average ratings of parental attention, speaking, caring, and loving on the relatively high workload days ($M_s = -.12$, $-.08$, $-.22$, and $-.18$, respectively) and

higher average ratings of attention, speaking, caring, and loving on the relatively low workload days ($M_s = .16$, $.16$, $.01$, and $-.02$, respectively). Thus, observers tended to describe the mothers as less behaviorally and emotionally involved during interactions with their children on the higher workload days. Their attention was less focused on the child, they spoke less, and they appeared less caring and loving to the raters.

One significant result and one marginally significant result from the multiple regression analyses reported in Table 2 were not consistent with the first hypothesis. The positive beta associated with approval indicated that the raters

Table 2
Regressions Predicting Daily Videotaped Parent-Child Interaction From Daily Job Stress

Outcome variable	Workload (β)	Negative social interaction (β)
Observed parental behavioral involvement		
Attention	-.10*	-.03
Speaking	-.15**	-.16**
Engaged	-.01	-.10
Teaching	.08†	-.09
Observed parental emotional involvement		
Approval	.09****	-.09†
Affection	.02	-.11**
Caring	-.15*	-.16†
Loving	-.19****	-.16†
Observed parental aversiveness		
Impatience	-.02	-.11†

Note. Analyses were based on data from 13 mother-child dyads who were videotaped. There were 65 daily observations for analyses using workload as the predictor variable and 63 daily observations for analyses using negative social interaction as the predictor variable.

† $p \leq .10$. * $p \leq .05$. ** $p \leq .01$. **** $p \leq .0001$.

observed more specific communications of approval on higher workload days (e.g., statements such as "Wow" or "Good job"). As shown in Figure 2, the mean scores for maternal expressions of approval on the 2 highest and the 2 lowest workload days were similar (.00 vs. .01). The marginally significant beta associated with teaching indicates that on higher workload days the mothers may have also made more attempts to teach, demonstrate, or instruct the child during the reunion episodes.

Whereas we expected that daily increases in workload would have an effect on the mothers' level of involvement with their children, previous research did not lead us to expect any effect of workload on the aversiveness of mother-child interactions. The result of the multiple regression analysis reported in Table 1 is consistent with previous research. There was no association between daily ratings of workload and the mothers' reports of mother-child aversiveness. There was only one reliable videotape code for aversiveness, the observers' ratings of maternal impatience. The result of this multiple regression analysis, reported in Table 2, is also consistent with previous research. There was no association between daily perceived workload and the observers' ratings of maternal impatience.

The second hypothesis predicted that daily increases in distressing social interactions with

coworkers and supervisors would be associated with a same-day spillover of negative feelings, resulting in increased aversiveness during parent-child interactions. The results of the multiple regression analysis in Table 1 did not support the hypothesis. Distressing social interactions at work were not associated with changes in the mothers' reports of the aversiveness of mother-child interactions. Moreover, as shown in Table 2, mothers' reports of more distressing social interactions at work were associated with a marginal decrease in the observers' ratings of maternal impatience during the daily mother-child reunion episodes. Thus, there was no evidence to support the second hypothesis. If anything, mothers appeared less impatient with their children immediately after workdays in which they had experienced more distressing social interactions. This marginally significant result may be consistent with the third hypothesis.

The third hypothesis predicted that daily increases in distressing social interactions with coworkers and supervisors would be associated with a same-day behavioral withdrawal during parent-child interactions. The results in Table 1 show that reports of more distressing social interactions at work were significantly associated with mothers' reports of increased withdrawal. The right-hand bar graph in Figure 1 illustrates this finding by comparing the mean

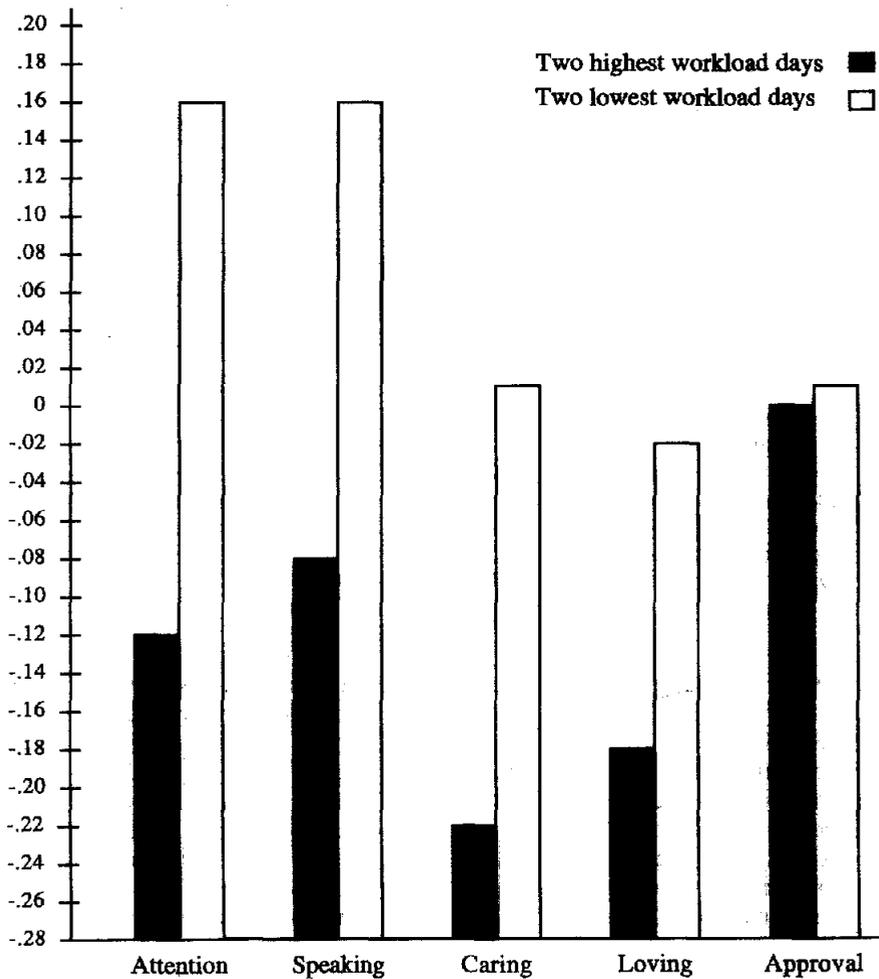


Figure 2. Average observer ratings of parent behavior on days with high and low perceived workload.

parental withdrawal ratings provided by the mothers on their 2 highest days and their 2 lowest days of social stress at work. There was a relatively high average rating of withdrawal on the days when there were reports of more distressing social interactions at work ($M = .07$) and a low average rating of parental withdrawal on days when there were less distressing social interactions at work ($M = -.11$). The means indicate that the mothers described themselves as more withdrawn (or less involved with their children) on days in which they had earlier reported more social stressors at work.

The results in the last column of Table 2 show that reports of more negative social interactions

at work were also significantly associated with one of the four observer ratings of behavioral involvement and with one of the four observer ratings of emotional involvement. Both of the significant betas were negative, which is consistent with the hypothesis of less involvement on higher social stress days. The bar graphs in Figure 3 illustrate the significant findings by comparing the mean ratings of each parental behavior as coded on the mothers' 2 highest days of social stress and on their 2 lowest days of social stress. Average ratings on the 2 higher social stress days are depicted by the shaded bars. As can be seen, mothers spoke less and made fewer expressions of affection on the rel-



Figure 3. Average observer ratings of parent behavior on days with high and low social stress.

atively high social stress days ($M_s = .09$ and $-.07$, respectively), than on the low social stress days ($M_s = .11$ and $.03$, respectively).

In addition to the significant findings, it is interesting to note that all of the betas associated with daily negative social interaction in Table 2 were negative, indicating less behavioral involvement and less positive emotional expression on days in which the mothers described more negative social interactions at work. Moreover, all of the betas associated with the indicators of positive emotional involvement were either significant or marginally significant. The marginally significant betas indicate that on higher social stress days the mothers tended to give fewer signs of approval and to be rated as less caring and less loving.

Psychological Functioning as an Individual-Difference Moderator

A series of multiple regression analyses tested the fourth hypothesis, that the association between day-to-day changes in employment conditions (workload and the quality of interactions with coworkers and supervisors) and daily parenting behavior would be moderated by individual psychological functioning. Specifically, we predicted that parents who reported

more psychological distress or more Type A behavior would be more reactive to daily job stressors. Because of the very small sample of mothers who were videotaped, analyses testing the individual-differences hypothesis were based only on self-reports of parent-child interaction. Psychological functioning scores were available for the 28 mothers who completed a final questionnaire. The same four regression models reported in Table 1 were run again. This time, however, an interaction term representing the cross product of an individual functioning variable (continuous scores for depression, anxiety, or Type A behavior) and the daily job stress rating was added after all of the other variables in the model had been controlled. Thus, 12 (4×3 psychological functioning variables) new regression models were run.

The research literature has documented an association between self-reported mental health and subjective ratings of job stressors, such as work overload and problematic relationships with coworkers and supervisors. People who describe more of these stressors at work also tend to report more psychological symptoms (Repetti, 1993a). Probably because of the small sample size in this study, none of the simple correlations between our measures of psychological functioning and individuals' ratings of

job stress (averaged over 5 days) reached an acceptable level of statistical significance. However, one trend in the data was consistent with prior research. Women who reported more symptoms of anxiety tended to also report more distressing social interactions at work ($r = .36$, $p \leq .10$). It is important to point out that any effects of psychological functioning on perceptions of job stress, or on parent-child interaction, were controlled in the multiple regression model through the SUBJ dummy variables, which controlled for all between-subjects differences. Through the SUBJ variables, the main effects of differences in psychological functioning scores, as well as the main effects of all other sources of between-subjects variance (both measured and unmeasured), were controlled before the interaction terms were tested.

As shown in Table 3, 6 of the 12 interaction terms (between a daily job stress predictor variable and an individual psychological functioning moderator variable) made significant contributions to the prediction of mothers' self-reported daily behavior. In addition, 2 interaction terms were marginally significant. All of the significant and marginally significant interaction terms were associated with positive betas. As illustrated next, the positive betas were consistent with the fourth hypothesis, that psychological distress and Type A behavior potentiate the effects of daily fluctuations in job stressors.

We followed the analyses reported in Table 3 by dividing the sample of mothers at the median on each of the psychological functioning scales. For each significant or marginally significant interaction term, the multiple regression analysis reported in Table 1 was re-computed for the half of the sample whose scores fell below the median on the individual-differences measure (i.e., low depressed group, low anxious group, or low Type A group), and it was recomputed for the half of the sample whose scores fell above the median on that measure (i.e., high depressed group, high anxious group, or high Type A group).³ The within-group regression analyses, in which each measure of psychological functioning was treated as a categorical variable, are reported here merely to illustrate the meaning of the significant interaction terms. Table 4 reports the results of the eight sets of within-group regressions corresponding to the eight significant or marginally significant interaction terms in Table 3. As can be seen, despite

the reduced power in these subgroup analyses, there were a surprisingly large number of significant betas in the high psychological distress and high Type A groups.

Psychological functioning as a moderator of the effects of daily workload. Six of the multiple regression analyses reported in Table 3 involved daily workload as a predictor variable (2 parent-child outcomes \times 3 psychological functioning moderator variables). In four cases the interaction with psychological functioning was significant; in one case it was marginally significant. The results reported in Table 4 show that the hypothesis that increased workload is associated with increased withdrawal was primarily supported among the mothers with higher scores on the three psychological functioning scales, particularly those who reported more symptoms of depression and anxiety. Table 4 also reports two tests of the association between daily workload and maternal ratings of mother-child aversiveness (which was not hypothesized). The pattern of results indicates that increased workload was associated with a same-day increase in maternal ratings of aversiveness among mothers who reported greater depression. The trend was the same for Type A behavior, although the effect was not significant in the small subgroup of high Type A mothers.

Psychological functioning as a moderator of the effects of daily negative social interactions at work. Six of the multiple regression analyses reported in Table 3 involved the daily rating of negative social interactions with coworkers and supervisors as the predictor variable (2 parent-child outcomes \times 3 psychological functioning moderator variables). In two cases there were significant interactions with Type A behavior; in one case an interaction with anxiety was marginally significant. With maternal ratings of withdrawal as the outcome variable, the within-group regressions reported in Table 4 show that for both the high and the low Type A groups the data were consistent with the hypoth-

³ Data from 5 mothers whose Type A scores fell at the median were not included in the high-low Type A analyses, resulting in very small samples of both high Type A ($n = 11$) and low Type A ($n = 12$) mothers. A separate set of analyses produced the same pattern of results as those reported in this article when each of the 5 mothers (at the median) was randomly assigned to either the high or the low Type A group.

Table 3
*Regressions Predicting Daily Self-Reported Parent-Child Interaction
 From the Interaction of Daily Job Stress and Psychological Well-Being*

Psychological well-being-job stress interaction	Interaction term (β)
Daily self-reported parental withdrawal	
Depression \times Workload	.36†
Anxiety \times Workload	.38**
Type A Behavior \times Workload	.05**
Depression \times Negative Social Interaction	-.10
Anxiety \times Negative Social Interaction	.18
Type A Behavior \times Negative Social Interaction	.02*
Daily self-reported parent-child aversiveness	
Depression \times Workload	.40**
Anxiety \times Workload	.12
Type A Behavior \times Workload	.04*
Depression \times Negative Social Interaction	.29
Anxiety \times Negative Social Interaction	.30†
Type A Behavior \times Negative Social Interaction	.05*

Note. $N = 116-129$ daily reports from 28 mothers who completed a final questionnaire.

† $p \leq .10$. * $p \leq .05$. ** $p \leq .01$.

esis that an increase in social stressors is associated with increased withdrawal. However, despite a very small sample, the result was much stronger among the mothers with higher Type A scores.

With maternal ratings of mother-child aversiveness as the outcome variable, the role of the Type A behavior pattern was similar. The negative spillover hypothesis was supported only among the mothers who reported more Type A behaviors. The marginally significant interaction between anxiety and negative social interaction also reflects a tendency for more anxious mothers to show a negative spillover response to interpersonal stressors at work. However, within our small subgroup of 14 high-anxious mothers, the increase in aversiveness on high social stress days did not represent a statistically significant change from their typical pattern of mother-child interaction.

Discussion

This study suggests that common daily stressors do influence patterns of family interaction. The findings were consistent with hypotheses linking short-term increases in job stressors to greater parental withdrawal. Both mothers and independent observers described more behavioral and emotional withdrawal on days when the mothers had earlier reported greater workloads or interpersonal stress at work. Despite a

positive correlation between withdrawal and aversiveness, most mothers did not appear to experience a negative emotion spillover response in which distressing social interactions at work led to increased aversiveness during parent-child interactions. However, the effects of daily job stressors on parenting behavior, including some negative emotion spillover effects, seem to be potentiated among individuals who experience greater psychological distress (depressed or anxious mood) and among those whose behavior is similar to the classic Type A pattern.

Effects of Increased Workload on Maternal Behavior

The evidence from this study suggests that on days when employed mothers' perceptions of the amount and pace of demands at work increase their interactions with their preschool-aged children may be marked by fewer signs of emotional and behavioral involvement. Thus, one of the main findings from the study of air traffic controllers was replicated in this sample of primarily low-income mothers (Repetti, 1994). Recall that all between-subjects variance was controlled in the multiple regression analyses before the short-term association between job stressors and parenting was tested. Therefore, any main effects of the mothers' psycho-

Table 4
Regression Analyses Comparing Main Effects of Job Stress Variables in Groups With High and Low Psychological Distress

Daily job stress predictor	Daily parenting outcome and individual-difference moderator	High psychological distress group (β) ^a	Low psychological distress group (β) ^b
Daily workload	Daily parental withdrawal		
	Depression	.44****	-.09
	Anxiety	.59****	.03
	Type A behavior ^c	.04	.01
	Daily parent-child aversiveness		
	Depression	.26**	-.19
Daily negative social interaction	Type A behavior ^c	.17	-.18
	Daily parental withdrawal		
	Type A behavior ^c	.45****	.21†
	Daily parent-child aversiveness		
	Anxiety	.17	-.06
	Type A behavior ^c	.44**	-.21

Note. Twenty-eight mothers completed a final questionnaire that included psychological distress scores.

^a The number of daily reports ranged from 50–64, depending on the variables included in the regression.

^b The number of daily reports ranged from 51–65, depending on the variables in the regression. ^c Excluding 5 mothers whose Type A scores fell at the median; 11 mothers in high psychological distress group and 12 mothers in the low psychological distress group.

† $p \leq .10$. ** $p \leq .01$. **** $p \leq .0001$.

logical functioning on perceptions of job stressors or on parent-child interaction cannot account for our findings of associations between daily fluctuations in stress and changes in parenting behavior. However, we did test individual differences in psychological functioning as moderators of the short-term effects of stress. Our data suggest that a daily increase in workload may not have much of an impact on mothers who experience little or no psychological distress. In contrast, the parent-child interactions of mothers who experience symptoms of depression and anxiety may be most vulnerable to daily increases in subjective workload. On days when they reported higher loads at work, these mothers later described themselves as less involved and less responsive with their children.

Because only a small subsample of the mothers was videotaped each day, we were not able to examine whether psychological functioning modified the effect of daily workload on maternal behavior during the parent-child reunion episodes. However, across all videotaped mothers, an increase in perceived workload was associated with signs of emotional and behavioral withdrawal. Recall that the videotaped reunions were expected to provide the clearest illustration of the immediate effects of job stressors. On high workload days, coders observed less maternal speech, less attention focused on the child, and less loving and caring behavior dur-

ing the parent-child play sessions. Thus, the observational data from this study are consistent not only with the mothers' daily self-reports but also with previous research using objective measures of daily workload to predict the behavior of fathers who were air traffic controllers (Repetti, 1994). Parents appear to be less behaviorally and emotionally involved with their children on higher workload days. If it had been possible to test psychological distress as an individual-difference moderator in this subsample, the observed behavioral correlates of increased workload might have been most pronounced among the more distressed mothers.

Among mothers who described more symptoms of depression, reports of aversive parent-child interactions also increased on higher workload days. Although increased aversiveness was not hypothesized, this result, together with the finding of increased withdrawal, appears to be consistent with research on maternal depression. In comparison with non-depressed mothers, depressed mothers seem to be generally less involved or engaged and display more negative affect with their children (Downey & Coyne, 1990). Depressed mothers may also be more reactive to stress (Breznitz & Sherman, 1987; Kochanska & Kuczynski, 1991). Mothers in this study who (although not clinically depressed) experienced relatively high levels of dysphoric affect may have responded more like

depressed mothers do to increases in stress. For example, Kochanska and Kuczynski (1991) found that the behavior of mothers who have a history of depression is more dependent on their current mood, with increases in negative mood associated with less responsiveness toward their children (i.e., less compliance and more ignoring and refusing of their children's requests). The Type A behavior pattern may act in a similar manner, potentiating the effects of increases in workload such that Type A mothers cope with increased pressures and demands at work by becoming both more withdrawn and more aversive with their children. Type A behavior was a significant moderator of these effects of daily workload in multiple regression analyses in which such behavior was treated as a continuous variable. However, follow-up analyses, in which Type A behavior was treated as a dichotomous variable, did not produce significant results in the very small subgroup of high Type A mothers in our study.

Well-functioning mothers did not describe themselves as more withdrawn or more aversive on high workload days. Other investigations have uncovered significant numbers of adults who actually seem to thrive under stress. For example, for about a third of the participants in one study, increases in daily stressors were associated with better mood and health (DeLongis et al., 1988). Recall that on higher workload days there was an overall increase in expressions of approval in the videotaped play sessions (and a marginal increase in teaching behaviors). Perhaps it was the mothers with high levels of psychological well-being who accounted for this surprising finding. An increase in positive statements such as "Wow!" or "Good job!" (despite an overall reduction in speech) may also have reflected an attempt by the otherwise withdrawn mothers to compensate for their apparent fatigue and weariness. On highly demanding days, they may have sensed that they were less able to be caring and loving (as was noted by the coders) and were spouting approving words in an effort to counteract that effect.

Effects of Negative Social Interaction on Maternal Behavior

One of the most robust findings in this study was a same-day increase in maternal withdrawal

on days when more distressing social interactions with coworkers and supervisors were described by the mother. We did not find any subgroups of mothers who were immune to this impact of daily social stressors at work. However, the effect may have been strongest among mothers who reported more Type A behaviors. In Repetti's (1994) study of air traffic controllers, fathers reported engaging in fewer high involvement behaviors with their school-aged children (e.g., helping with homework) after workdays during which they were more disturbed by their interactions with coworkers and supervisors. This finding was replicated in the present study through the use of both mothers' own descriptions of their behavior each evening and observers' ratings of the daily behavior of a subsample of the mothers. On higher social stress days, there were significant reductions in observers' ratings of maternal speech and signs of affection, and there were marginal reductions in approval behaviors and in ratings of how caring and loving the mothers appeared during the reunions.

A trend suggesting observations of fewer signs of maternal impatience on days in which there were more negative social interactions at work may reflect the general emotional and behavioral withdrawal that took place on those days. In other words, some mothers may succeed in distancing themselves from their children when they are disturbed by earlier interactions with coworkers and supervisors. If this is so, they may appear to be more patient with their children simply because they are more passive during the interaction. Thus, in some cases, mothers' emotional distancing and behavioral avoidance may lead to decreases in not only positive, but also negative, responses to their children. Indeed, mothers may actively strive to protect their children from the kind of negative emotion spillover effect that was hypothesized in this study. It is possible that social pressures to conform to modern definitions of "good parenting" often succeed in replacing irritable parent responses with social withdrawal.

In analyses not reported here, we examined preschoolers' reactions to signs of maternal withdrawal in the videotaped reunions (Repetti & Wood, in press). It is perhaps not surprising that the children appeared less happy during the second half of the play sessions on days when their mothers were rated as more withdrawn

during the first 5 min of the session. However, in addition to evidence of some dysphoria, the children also behaved in a *less* aversive manner and displayed *more* positive behaviors during the latter half of the play periods on those days. These findings may indicate that the preschoolers used a strategy of trying to please and to engage a withdrawn parent through positive bids for attention (e.g., by being more "well behaved," by demonstrating greater interest in the activity at hand, or by expressing competence or pride with comments like "I can do it" or "Look what I did!"). Thus, many children may respond to parental withdrawal in a proactive manner, perhaps in an attempt to prevent or inhibit the parent's continued withdrawal.

For some parents, however, distressing social interactions at work may also lead to impatience and irritability with children. Generally high levels of anxiety and Type A behaviors appeared to increase the possibility of a same-day negative emotion spillover from work to home. On days when they reported more negative feelings, such as annoyance, resentment, and tension, during interactions with coworkers and supervisors, high Type A mothers later described interactions with their children as more aversive and as involving greater use of discipline. Studies testing daily negative spillover effects have produced inconsistent results. This study, along with another daily diary study (Bolger et al., 1989), failed to find across-the-board, same-day correlations between distressing social exchanges at work and aversive patterns of parent-child interaction. However, the negative spillover effect observed among the high Type A mothers in this sample is very similar to the effect reported earlier in male air traffic controllers (Repetti, 1994). It is also similar to the effect of overloads on aversiveness found in this study among the mothers with more depressed affect. Evidence linking job stress to some parents' increased irritability with children is consistent with data from clinical samples indicating that daily stressors increase the probability that some mothers will behave in an aversive fashion with their children (Dumas, 1986; Snyder, 1991).

Perhaps negative emotion spillover responses occur primarily under background conditions of chronically high stress, such as among mothers whose children are difficult to manage (Dumas, 1986; Snyder, 1991), mothers who are high in Type A behavior (this study), or fathers in very

demanding occupations (Repetti, 1989). Although recent findings from Margolin and her colleagues (1993) suggest that negative spillover responses may be observed in large community samples, the effects may be driven primarily by those families living under the most adverse circumstances. Whichever families are most vulnerable, the cumulative effects of repeated failures to contain negative affect may be quite detrimental. At least among the fathers in the air traffic controller study, there was evidence suggesting that chronic social stress at work (and chronic negative emotion spillover) over time shapes a more aversive parent-child relationship (Repetti, 1994). This may reflect a process whereby immediate responses to short-term increases in stress gradually settle into stable patterns of interaction as families accommodate to chronically high levels of stress (Repetti & Wood, in press).

Type A Behavior as an Individual-Difference Moderator

Overall, the measure of the Type A behavior style was the most sensitive of the individual-difference moderator variables. Each of the four interaction terms involving the Type A variable made significant contributions to the regression models, although follow-up analyses (in which Type A behavior was treated as a dichotomous variable) did not always yield significant effects within our very small subsamples of high and low Type A mothers. In general, mothers who reported more of the classic behaviors associated with the Type A pattern appeared to be the most responsive to daily increases in both types of job stressors. According to their own reports, they reacted with both withdrawal and increased aversiveness to social stressors and to workload stress. It may be that most mothers attempt to contain anger generated at work through withdrawal and avoidance. However, mothers who often feel pressed for time and who are more easily upset may find that they cannot maintain control over angry impulses after they return home from a stressful day at work and are faced with a new set of interpersonal and physical demands. The Type A scale that we used may have assessed the mothers' (accurate) understanding of their own degree of responsiveness to stress. It is unfortunate that the small sample of mothers and the rather simple measure of

Type A behavior that was used in this study make it difficult to know precisely what differentiated the high from the low Type A mothers. Nonetheless, the finding that mothers who report more Type A behaviors display an increased propensity to become irritable under stress warrants further study.

Conclusions

The small sample of mother-child dyads in this study limited our power to detect associations in the data. This was particularly the case for analyses involving the videotaped parent-child interactions. Nonetheless, short-term fluctuations in levels of daily stress at work did appear to contribute to day-to-day changes in parenting behaviors. Our findings suggest, first, that mothers are much more likely to respond to job stress by withdrawing than by becoming more irritable. Second, mothers who experience little or no psychological distress or few Type A behaviors appear to be largely immune to most of the negative effects of daily stress on parenting. The only impact of job stress on their behavior was a tendency to withdraw on days in which they had experienced distressing interactions with coworkers or supervisors. Third, mothers who report more behaviors associated with the Type A pattern may be the most vulnerable to daily variations in stressors at work. In this way, their behavior may more closely resemble the behavior of other parents in high stress circumstances. The identification of measurable individual differences in behavioral responses to daily stressors is important. It is particularly striking to uncover this pattern of findings with the limited sample size in this study. One of the important ways that parents (and parent-child dyads) differ from each other may be in the way that they react, in the short term, to the occurrence of common daily stressors. Future research, with larger samples, may indicate whether differences in short-term reactions to daily stress help to explain why some families adjust well, and some poorly, under conditions of chronic stress.

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