Family Relations Interdisciplinary Journal of Applied Family Studies
ncfr catalyzing research, theory and practice

NANCY L. MARSHALL AND ALLISON J. TRACY *Wellesley College*

After the Baby: Work-Family Conflict and Working Mothers' Psychological Health

This study examines work and family characteristics and depressive symptomatology among over 700 working mothers of infants. Working mothers in poorer quality jobs, as well as working mothers who were single or whose infant's health was poorer than that of other infants, reported greater depressive symptomatology. The effect of job quality on depressive symptomatology was mediated by work-family conflict, whereas infant health and marital status had direct effects on depressive symptomatology.

Despite the dramatic rise in employment among mothers of infants, we know very little about the role of work-family conflict in the psychological health of new mothers. Employment rates among mothers of infants had risen to 55% by 2007 (U.S. Department of Labor, 2008), and most new mothers return to work by the time their baby is 3 months old (U.S. Department of Labor, 2004). This striking social change has given rise to concerns about the effect of maternal employment on children, but little research has addressed the effects of employment on the psychological health, including depressive symptomatology, of new mothers. Given the research on the effects of maternal depression on children and families (Cummings & Davies, 1994), the lack of research on work-family conflict and the psychological health of new mothers need to be redressed. What little we do know comes from studies of the effects of employment on health among women as a group, or among workers as a group, with limited attention to life-cycle stage.

We know that employment has many benefits for women, as for men, including more positive perceptions of health and improved physical functioning (Ross & Mirowsky, 1995). Combining work and family, however can lead to experiences of work–family conflict and other stressors that may negatively affect health (Byron, 2005). The apparent paradox inherent in these two research findings – that employment status has health benefits, but combining work and family may have negative health consequences – has led to a body of research on women's employment and health. A recent study of trends over time concluded that, on balance, women's employment has positive health effects; however, these benefits are reduced for working mothers of young children (Schnittker, 2007). The reduced health benefits for working mothers of young children parallel research that shows that these mothers report greater conflicts between work and family responsibilities than do mothers of older children (Higgins, Duxbury, & Lee, 1995). work-family conflict is also more common among working mothers than among employed fathers (Marshall & Barnett, 1993), reflecting, in part, the fact that mothers continue to bear greater responsibility for day-to-day parenting despite fathers' increased involvement with their children (Bianchi, Milkie, Sayer, & Robinson, 2000).

Wellesley Centers for Women, Wellesley College, 106 Central St., Wellesley, MA 02481 (nmarshal@wellesley.edu).

Key Words: depressive symptomatology, infant health, psychological health, work-family conflict, working mothers.

The question remains, what are the factors that contribute to the greater health risk for employed mothers of young children? We argue that, with the combined demands of employment and parenting, mothers of infants face particular risks to their psychological health, including the risk of increased depressive symptomatology. If we are to understand family health in the 21st century, with high rates of maternal employment among mothers of infants, it is imperative that we understand not only the effects of maternal employment on children, but also the effects of combining employment and parenting on mothers of infants. In the present study, we examined the experiences of working mothers of infants and the implications for their depressive symptomatology, using longitudinal data from over 700 families in the NICHD Study of Early Child Care and Youth Development.

Systems Theory in work-family Research and Health

Westman and Piotrkowski (1999) called for the use of systems theory as a starting point in the theories used in work-family research because ''it allows for a broad, unifying theoretical perspective in which both workplaces and families are considered semiopen systems with permeable boundaries'' (p. 303). Ecological systems theory views individual health and development as nested within interconnected systems. Microsystems, such as the workplace and the family, are characterized by face-to-face connections among individuals. These interdependent microsystems form a work-family mesosystem, which consists of the work and family microsystems and the linkages or processes that combine or connect them (Bronfenbrenner, 1989). Since Westman and Piotrkowski's call, several articles have appeared that use ecological systems theory in health and/or work-family research (e.g., Grzywacz & Marks, 2000).

Paid Work and Women's Health

The paid work microsystem has been the subject of extensive study by occupational health psychologists. Existing research has established the importance of working conditions – particularly job demands, worker control, and work-related social support – to health and well-being (Karasek & Theorell, 1990). Beginning in the 1980s, a growing body of research on employment and health specifically examined women's health and found that women, like men, are susceptible to the health effects of poor working conditions (see Swanson, Piotrkowski, Keita, & Becker, 1997, for a review). In addition, longer work hours have been found to be associated with both work-family conflict (van Rijswijk, Bekker, Rutte, & Croon, 2004) and poorer health and well-being among working mothers of young children (Schnittker, 2007).

Families and Working Mothers' Health

Family microsystem characteristics, such as family size and the presence of a spouse or partner, are also related to women's health and well-being. A large body of research has found that women with more children, or who were not married, were more likely to experience depressive symptoms (Ross, 1995; Segre, O'Hara, Arndt, & Stuart, 2007). Larger families mean an increased workload, especially for women, and are associated with greater difficulty in combining work and family (Marshall & Barnett, 1993; Voydanoff, 1989). Husbands or partners can potentially alleviate some of this workload; indeed, a meta-analytic review of the research found that single parents experience greater work-family conflict than do married parents (Byron, 2005).

Child Health

By considering families as a microsystem, we can incorporate the health of one family member into our models of the health of other family members. Among young children, the incidences of the common illnesses of early childhood, such as upper respiratory infections, ear infections, and gastrointestinal infections, peak at around 12 months of age and then slowly decline (NICHD Early Child Care Research Network, 2001). These infections can affect parenting stress among working mothers (Frank et al., 1991; Lee, Vernon-Feagans, Vazquez, & Kolak, 2003) and workers' productivity (Grzywacz et al., 2005).

Work-family Conflict

The relation between the paid work microsystem and the family microsystem, on the one hand, and mothers' health and well-being, on

the other, is sometimes conceptualized as additive – the effects of paid work are added to the effects of family. Ecological systems theory suggests, however, that there are additional effects of paid work and family microsystems, as a function of the connections between the two microsystems. Microsystems have boundaries or borders of time, schedule, location, and tasks; these borders are permeable, allowing events, behaviors, stressors, and psychological aspects of one microsystem to pass to the other microsystem (Desrochers & Sargent, 2003). This dynamic connection or interface between the work and family microsystems can be characterized as both positive – work-family gains – and negative – work-family conflict. In this article, we focus on the health implications of work-family conflict, which occurs when the tasks or responsibilities of one system interfere with those of the other system.

Frone, Russell, & Cooper (1992) posited a model of work-family conflict as a *mediator* of the relations between the work and family microsystems, on the one hand, and health and well-being outcomes, on the other (see Figure 1). Research using this model has found that work-family conflict mediates the effects of the paid work and family systems on individual and family outcomes, including job and family satisfaction (Aryee, Srinivas, & Tan, 2005), psychological health (Montgomery, Panagopolou, & Benos, 2006), marital tension (Pittman, 1994), and parenting (MacDermid & Williams, 1997).

The Present Study

Prior research has identified the importance of the work and family microsystems to women's health and the role of work-family conflict as a possible mediator of this relationship. To date, however, there has been no systematic investigation of this model among working mothers of infants, a group at particular risk for work-family conflict and negative health consequences. We focus our investigation on depressive symptomatology as an indicator of women's psychological health, given the importance of maternal depressive symptomatology to child and family well-being.

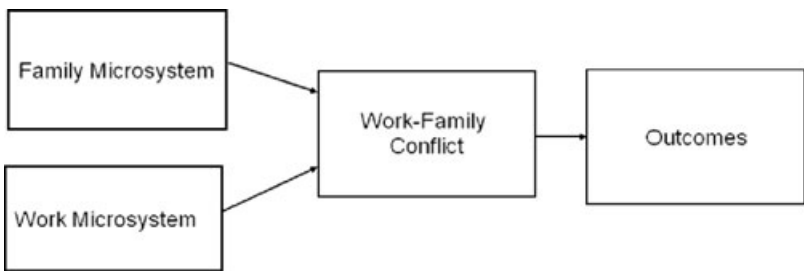
On the basis of ecological systems theory, we posit:

> *Hypothesis 1:* Characteristics of the work microsystem, as well as characteristics of the family microsystem, will be associated with working mothers' psychological health. Specifically, working more hours, poorer job quality, and having more children will be positively related to greater depressive symptomatology; however, living with a spouse/partner and better child health will be related to reduced depressive symptomatology.
> *Hypothesis 2:* The relation between the work and family microsystems, on the one hand, and depressive symptomatology, on the other, will be mediated by work-family conflict, such that work-family conflict reduces the effect of the work and family microsystems on depressive symptomatology.

Method

This study used data from the NICHD Study of Early Child Care and Youth Development, a prospective longitudinal study of 1,364 families from 10 sites around the United States. Families were randomly selected from all births in 1991 at hospitals in each of the 10 sites. Recruitment was restricted to healthy mothers over the age of 18. The response rate for families continuing

Figure 1. Conceptual Model.



in the study through 36 months postpartum was 89%. Further information on sampling can be found in the NICHD Early Child Care Research Network (NICHD ECCRN) (2005).

Analysis Sample

The analysis sample consisted of all women employed at least 10 hours per week at 6 months postpartum ($n = 756$). Descriptive statistics for all analysis variables are provided in Table 1.

Data Collection and Measures

Mothers were interviewed in their homes at 1, 6, and 15 months postpartum. The interviews collected standardized data on demographics, employment, work-family conflict, maternal depressive symptomatology, and child health, among other variables. Further information on data collection procedures can be found in NICHD ECCRN (2005). Each of the measures used in this paper are described below.

Paid work microsystem characteristics. We included two measures of paid work microsystem characteristics, work hours and job quality. Mothers were asked how many hours per week they were working at all jobs at each assessment. On average, women in the analysis sample were employed 34.58 hours at 6 months and 35.56 hours at 15 months; 72% of the women were employed full-time (35 hours/week or more) by 6 months.

We measured job quality using a short form of the Job-Role Quality (JRQ) Scale (Marshall, Barnett, Sayer, 1997), completed by the respondents at 6 and 15 months postpartum. The JRQ includes items to measure job demands, lack of advancement opportunities, skill discretion, decision authority, recognition, and other working conditions. Each item was rated on a scale from 1 = *not at all a rewarding part of my job/not at all a concern* to 4 = *extremely rewarding/of extreme concern*. Positive items were reverse scored; a total JRQ score was calculated at each time point by summing the items then dividing the sum by the total number of items to yield an average-per-item score. A positive total JRQ score reflects a poorer quality or more stressful job; a negative total JRQ score reflects a higher quality job, as in a job with greater skill discretion and decision authority and fewer job demands. The theoretical range of JRQ scores is from −4 to 4. The mean JRQ scores for women in the analysis sample were −1.06 at 6 months ($SD = 0.92$) and −1.15 at 15 months ($SD = 0.90$); the average job was rated as more rewarding than stressful at both time points. The Cronbach alpha for the JRQ was .82 at 6 months and .84 at 15 months.

Family microsystem characteristics. We assessed three family variables: number of children, partner present (1 = *yes*; 0 = *no*), and the health of the child. At 6 months postpartum, 88% of the women were married or living with a partner, and women had a mean of 1.7 children. Mothers were asked to rate their baby's overall health on a scale from 1 = *poor* to 4 = *excellent*. The mean child health rating was 3.32 at 6 months and 3.19 at 15 months;

Table 1. *Means (SD) for Analysis Variables (n = 756)*

	Time of Assessment (Months Postpartum)					
	1 Month		6 Months		15 Months	
Variables	*M*	*SD*	*M*	*SD*	*M*	*SD*
Depressive symptomatology	10.28	8.41	8.08	7.28	8.11	7.30
Respondent age	28.75	5.23				
Race	0.86	0.35				
Family income-to-needs ratio			4.21	3.24	4.20	3.27
Negative affectivity			29.29	7.10		
Number of children			1.70	0.83	1.73	0.84
Child's health			3.32	0.72	3.19	0.75
Marital status			0.88	0.32	0.88	0.33
Job quality			−1.06	0.92	−1.15	0.90
Work hours per week			34.58	11.29	35.56	10.98
Work-family conflict			1.75	0.53	1.74	0.51

48% of 6-month-olds and 40% of 15-month-olds were rated as in excellent health. In comparison, nationally, the mean health rating was 3.37 among parents of children ages birth to 4 years (calculated from National Center for Health Statistics Vital and Health Statistics, 2007). In the present study sample, the overall health rating was significantly associated with mothers' reports of the number of illnesses at 6 and 15 months (NICHD Early Child Care Research Network, 1994). The most common illness was respiratory infections (colds, runny noses, coughs) – 76% of 6-month-olds and 73% of 15-month-olds had had at least one respiratory infection in the previous 3 months. Other common illnesses included ear infections and gastrointestinal problems. At 6 months, 20% of babies had not had any of these illnesses, whereas 39% had had two or more in the past 3 months; rates at 15 months were 16% and 46%, respectively.

Work-family conflict. Work-family conflict was measured by two scales from Wortman, Biernat, and Lang (1991). The extent to which work interfered with home was measured by a six-item scale; sample items include ''Your working creates strains for your children,'' and ''Working leaves you with too little energy to be the kind of parent you want to be.'' The extent to which home interfered with work was measured by a five-item scale; sample items include ''Thinking about your children interferes with your performance at work,'' and ''Because of your family responsibilities, you have to turn down work activities or opportunities that you would prefer to take on.'' Response categories for all items ranged from 1 = ''*not at all true*'' to 4 = ''*very true*.'' Each scale was scored as the mean of the scale items. The Cronbach alpha on the work-to-home interference scale was .85 at 6 and 15 months; the Cronbach alpha on home-to-work interference scale was .69 at 6 and 15 months. *Work-family conflict* was calculated as the mean of these two scale scores; a higher score indicates higher levels of conflict between work and family systems. The mean work-family conflict score at 6 months was 1.75, and 1.74 at 15 months.

Depressive symptomatology. We assessed depressive symptomatology using the Center for Epidemiological Studies Depression (CES-D) Scale (Radloff, 1977), administered at 1, 6, and 15 months postpartum. The CES-D is a 20-item checklist measuring the presence and frequency of depressive symptoms in the previous week. Response categories range from 0 = *''rarely or none of the time (less than once a week)''* to 3 = *''Most or all of the time (five to seven times a week)*.'' Sample items include ''I felt sad,'' ''I had crying spells,'' and ''I felt that I could not shake off the blues even with the help of my family/friends.'' Radloff reported reliabilities in the .84–.90 range. The CES-D is one of the most widely used research measures of depressive symptoms and has been extensively tested for validity and reliability (Cho, Moscicki, Narrow, & Rae, 1993). Alphas in this sample ranged from .85 to .90. The CES-D theoretical range of scores is 0–60; a score of 16 or higher is considered to warrant further screening (Vazquez, Blanco, & Lopez, 2007). The mean CES-D score in this sample was 10.28 at 1 -month postpartum, 8.08 at 6 months, and 8.11 at 15 months.

Controls. All analytic models in this paper included demographic controls commonly used in work-family research (LaPierre & Allen, 2006): mother's age (mean age = 28.75, *SD* = 5.23), race/ethnicity (1 = *non-Hispanic White*, 0 = *all other*; 86% of the sample was non-Hispanic White), and income-to-needs ratio. Income-to-needs ratio was calculated as annual family income divided by the federal poverty level for that year adjusted for family size. In this sample, the mean income-to-needs ratio was 4.21 at 6 months postpartum, indicating that the average family income was 421% of the federal poverty level; the average family was middle class, based on family income. Age and race/ethnicity were measured at one point in time; family income was measured at all time points.

All analytic models in this paper controlled for *negative affectivity* – the propensity to view the world negatively – which was assessed at 6 months postpartum. Individuals predisposed to negative affectivity may be more likely to report poorer job quality and greater depressive symptomatology, introducing a bias into the analyses in studies using self-report measures (Brennan & Barnett, 1998; Noor, 1997). Negative affectivity is measured by the 12-item Neuroticism subscale of the NEO Five-Factor Inventory (Costa & McCrae, 1985), which measures a predisposition to respond with negative affect. Sample items include ''I often get angry at the way people treat me,'' and ''Too often,

Table 2. *Correlations Among Analysis Variables (6 Months n = 746; 15 Months n = 738)*

	6 Months											
15 months	1	2	3	4	5	6	7	8	9	10	11	12
1. CES-D[a]		.48	−.12	−.07	−.16	.64	.02	−.14	−.14	.34	.06	.37
2. CES-D[b]	.52		−.14	−.10	−.13	.48	.01	−.09	−.07	−.25	.03	.26
3. Age	−.13	−.12		.16	.46	−.15	.21	.11	.23	−.15	.00	−.02
4. Race	−.09	−.09	.17		.20	−.03	−.09	.03	.30	−.05	−.04	−.02
5. Income-to-needs ratio	−.18	−.16	.40	.22		−.20	−.17	.13	.30	−.22	.06	−.08
6. Negative affectivity	.45	.61	−.15	−.04	−.14		.01	−.11	−.05	.42	.05	.38
7. *N* children	.03	.03	.23	−.10	−.18	.02		−.08	.05	−.03	−.06	.02
8. Child's health	−.16	−.14	.08	.07	.09	−.14	−.01		.02	−.11	−.06	−.06
9. Marital status	−.15	−.16	.26	.32	.31	−.08	.02	.05		−.09	−.02	−.02
10. Job quality	.33	.28	−.09	−.01	−.12	.32	−.02	−.08	−.05		.09	.41
11. Work hours	.03	.05	−.01	−.09	−.00	.00	.01	−.11	−.06	.06		.29
12. Work-family conflict	.29	−.06	−.01	−.02	−.06	.32	.03	−.11	−.03	.35	.19	

[a]CES-D as dependent variable.

[b]CES-D as independent variable (time period prior to time period of dependent variable).

when things go wrong, I get discouraged and feel like giving up.'' The Cronbach's alpha for the Neuroticism scale was .84.

Results

We estimated the relationships specified in Hypotheses 1 and 2 using ordinary least squares regression techniques. Because we wanted to examine the joint effects of family and work microsystems on mother's psychological health, we included all covariates and microsystem variables in a single analysis for each hypothesis. Both models controlled for negative affectivity, mother's age, mother's race/ethnicity, family income-to-needs ratio, and depressive symptomatology at the immediately prior assessment point (i.e., 6-months CES-D regressed onto 1-month CES-D, 15-months CES-D regressed onto 6-months CES-D). Table 2 shows the correlations among analysis variables at 6 and 15 months postpartum.

Hypotheses 1: Unmediated Model

We hypothesized that characteristics of both the work microsystem and the family microsystem would be associated with employed mothers' depressive symptomatology. The results of the model estimating the unmediated effects of work microsystem variables and family microsystem variables are given in Table 3 (Model 1). At both 6 and 15 months, the predictive value of the models was high ($R^2 = .46$ and .34, respectively, $p < .001$).

Control variables. Negative affectivity consistently predicted depressive symptomatology at each time point. The only other control variable predicting depressive symptomatology was the previous level of symptomatology; in this sample, mother's age, race/ethnicity, and income-to-needs ratio did not uniquely predict depressive symptomatology.

Work characteristics and family characteristics. At both 6 and 15 months postpartum, job quality was significantly associated with depressive symptomatology, whereas hours worked was not. At 6 months, single mothers reported higher depressive symptomatology than did married or partnered mothers; marital status was in the same direction but did not reach significance at 15 months. In addition, child's health was negatively associated with depressive symptomatology.

Hypothesis 1 was partially supported in that some, but not all, of the characteristics of both the work and family microsystems significantly predicted working mothers' depressive symptomatology. Specifically, job quality but not number of hours worked was a significant predictor of depressive symptomatology. Similarly, as hypothesized, marital status at 6 months and child's health at both 6 and 15 months predicted mother's depressive symptomatology, whereas the number of children in the household did not.

Table 3. *Regression Coefficients for Unmediated and Mediated Models*

Time Point	Model 1 Predictors of Depressive Symptomatology		Model 2 Predictors of Work-Family Conflict		Model 3 Model 1 with Work-Family Conflict Added	
Variables	*B*	*SE B*	*B*	*SE B*	*B*	*SE B*
6 months postpartum	($n = 746$)		($n = 746$)		($n = 746$)	
CES-D at 1 month	.19***	.04	.01**	.00	.18***	.04
Age	.01	.02	.01	.01	.02	.01
Race	.08	.06	.02	.03	−.04	.02
Income-to-needs ratio	.02	.04	−.00	.03	.02	.02
Negative affectivity	.51***	.15	.02***	.00	.49***	.13
N children	.08	.05	.02	.02	.05	.03
Child's health	−.58*	.24	.01	.00	−.60*	.26
Marital status	−2.26***	.56	.02	.00	−2.30***	.53
Job quality	.51*	.25	.17***	.04	.24	.13
Work hours	.01	.00	.01***	.00	−.01	.01
WF conflict					1.63***	.34
R^2	.46		.30		.47	
F	62.61***		31.50***		59.17***	
15 months postpartum	($n = 738$)		($n = 738$)		($n = 738$)	
CES-D at 6 months	.38***	.08	.01**	.00	.37***	.09
Age	−.02	.01	.01	.00	−.03	.03
Race	−.28	.16	.01	.01	−.29	.15
Income-to-needs ratio	−.09	.05	−.00	.00	−.09	.07
Negative affectivity	.17***	.05	.01***	.00	.15***	.04
N children	.16	.12	.00	.01	.16	.09
Child's health	−.61*	.24	−.02	.02	−.59*	.29
Marital status	−1.16	.61	.03	.02	−1.19	.63
Job quality	1.32***	.37	.14***	.04	1.17***	.29
Work hours	−.01	.00	.01***	.00	−.01	.02
WF conflict					1.03*	.52
R^2	.34		.21		.34	
F	37.50***		19.33***		34.00***	

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

Hypothesis 2: Mediated Model

Following Baron and Kenny (1986), we tested the mediation hypothesis by estimating three models. The first model, discussed in the previous section, regressed the dependent variable (depressive symptomatology) on the independent variables (microsystem variables and controls). The second model in the sequence regressed the hypothesized mediator (work-family conflict) on the independent variables. The third model regressed the dependent variable (depressive symptomatology) on both the independent variables and the work-family conflict mediator. Mediation is supported if (a) the independent variables of interest (in this case, work and family characteristics) predict both the mediator and the dependent variable, (b) the mediator predicts the dependent variable, and (c) the inclusion of the mediator in predicting the dependent variable decreases the effects of the independent variables of interest (Baron & Kenney).

Model 2: work-family conflict. As shown in Table 3, Model 2, both work characteristics were significantly associated with work-family conflict at both 6 and 15 months. Because work hours were not related to depressive symptomatology in Model 1, however, work-family conflict could not serve as a mediator of the relation between work hours and depressive symptomatology. In addition, none of the family characteristics was significantly associated with work-family conflict; therefore, work-family conflict could not serve as a mediator of the relation between these family microsystem variables and depressive symptomatology.

Model 3: Depressive symptomatology with work-family conflict added. As Table 3, Model 3, shows, work-family conflict was significantly related to depressive symptomatology at 6 and 15 months. In addition, the effect of job quality was reduced to nonsignificance, meeting the requirements for a test of mediation (Baron & Kenny, 1986). Therefore, we can describe the relationship between job quality, on the one hand, and depressive symptomatology, on the other, as mediated by work-family conflict, partially supporting Hypothesis 2.

Bi-directionality of work-family conflict. Frone et al. (1992) argued that work-family conflict is bi-directional, encompassing both work-to-home interference and home-to-work interference. A recent meta-analysis of 61 studies of work-family conflict found support for this argument (Byron, 2005). Byron found, however, that the two measures – work-interferes-with-home and home-interferes-with-work – were strongly related to each other. In addition, Byron found that job stress and family stress have strong associations with both work-interferes-with-home and home-interferes-with-work. In the present study, the two work-family conflict scales (work-to-home interference and home-to-work interference) were combined because separate analyses showed few differences in the models and there were strong intercorrelations between the two scales ($r = .58$ at 6 months).

In follow-up analyses, we examined separately the role of work-to-home interference and home-to-work interference as mediators. At 6 months, we found no differences in these models. At 15 months, work-interferes-with-home did not reach significance as a predictor of depressive symptomatology, although the association was in the expected direction ($\beta = .05$, $p = .18$); home-interferes-with-work was significant ($\beta = .08$, $p < .001$), indicating that home-to-work spillover plays a role in the mediation between job quality and depressive symptomatology.

Discussion

Maternal employment rose dramatically over the second half of the 20th century. Although employment has had positive effects for women and for their families, working mothers of young children are less likely than other women to reap these benefits. With more than half of all mothers of infants returning to work within the first 3 months postpartum and the majority of these women working full-time, understanding women's postpartum health requires an examination of both family factors and work factors, as well as the work-family interface.

Our research extended prior research on work and family by focusing on a group, working mothers of infants, who are not experiencing the expected health benefits of employment (Schnittker, 2007). Second, we have argued that, to address the health needs of this group, it is important to use an ecological systems model, which calls our attention to not only the work and family microsystems but also the intersections of these microsystems.

We had expected that both hours worked and job quality would be important contributors to women's health. Although we found that working more hours was associated with greater work-family conflict, this greater conflict did not translate into greater depressive symptomatology. In this sample, where 72% of women were employed full-time by 6 months postpartum, the demands associated with working longer hours contributed to conflicts of time, schedule, and energy, but did not seem to contribute to crying spells, feelings of loneliness or sadness, or other symptoms of depression.

In contrast, poorer quality jobs led to greater feelings of work-family conflict and to greater depressive symptomatology. Although we found the expected work-family process – poorer quality jobs spilled over into the home – we also found that women with poorer quality jobs reported more interference from home to work. The fact that both work-to-home and home-to-work interference link job quality to depressive symptomatology may reflect the high correlation between the two interference measures, but this finding is not limited to the present study or the specific measures (Byron, 2005). Instead, it may reflect processes within the larger work-family mesosystem. For example, one parent with a poor job can take that stress home, which then crosses over to the other parent, creating home stress, and that home stress can then feed back to the first parent's job. In fact, other researchers have found that home stressors can spill over into the workplace for individual workers and that work and home stressors can cross over within families from one individual to his or her spouse (e.g., Bakker, Demerouti, &

Dollard, 2008; Bolger, DeLongis, Kessler, & Wethington, 1989).

The family microsystem was also important to working women's postpartum health. This study provides important evidence of the connections between infants' common illnesses and mothers' psychological health; mothers with less healthy infants reported greater depressive symptomatology. This relationship may reflect the stress of caring for a sick infant, maternal sleep disruption as part of the required caretaking, or other factors; future research is necessary to determine the processes in this relationship between child and maternal health.

Contrary to research on the importance of marriage to women's psychological health (Ross, 1995), we found that, although marital status was associated with depressive symptomatology at 6 months, it was not at 15 months. This may reflect differences in the support and involvement of husbands and partners at 6 months compared with 15 months, such that new fathers are more involved with new babies than with toddlers. Conversely, it may reflect the fact that, at 6 months, mothers have been back at work for only a few months, many babies are not yet sleeping through the night, and mothers may have a greater need for their husband's active involvement, a need that is not as pressing at 15 months.

This study has provided important evidence of the value of examining models of work and family within a specific life-cycle stage – among working mothers of infants. Research on women as a group, or workers as a group, masks the specific processes within this population and limits our ability to understand and address both the challenges and strengths of this period in family life. Future research should confirm these findings in other samples of working mothers of infants, including among larger samples of women of color and low-income women, whose experiences of work-family conflict may differ from those of white, middle-class women. In addition, this study focused on depressive symptomatology; future research should address other health indicators.

Implications for Policy and Practice

Although we found that work and family experiences are related to work-family conflict, depressive symptomatology, or both, it is important to point out the overall positive picture of these working mothers. On average, they describe their jobs as providing more positive than negative experiences and their children as being in very good health, and report that they experience low levels of work-family conflict and depressive symptomatology. Our research should not contribute to calls for reductions in maternal employment, given the many women for whom this is a positive experience.

Our concern here is with those women at greater risk for depressive symptomatology because they have poorer quality jobs or children whose health is only fair or poor and are experiencing elevated levels of work-family conflict. Higher levels of depressive symptomatology are indicators of the mother's greater risk for other health consequences (Murray & Lopez, 1997), as well as greater risk for work absenteeism (Clumeck et al., 2007), poor parenting, and negative child outcomes (Cummings & Davies, 1994).

For these women, prevention and intervention efforts must address all aspects of the work-family system. First, employers need to improve job quality. Although all workers benefit from improved working conditions, working mothers of infants are particularly likely to benefit from greater control over their work, including the opportunity to work from home or to flex their schedule on a day-to-day basis. Most formal flextime policies require workers to commit to a specific work schedule for a particular time period; these policies do not consistently make a difference to work-family conflict (Christensen & Staines, 1990). When workers can adjust their work hours as needed, however, they report improved work-family balance and greater job satisfaction (Glass & Camarigg, 1992; Hill, Hawkins, Ferris, & Weitzman, 2001).

Working mothers of infants also face demands unique to their life-cycle stage – the responsibilities of parenting an infant. These life-cycle stage demands are evident in the impact of child health on the depressive symptomatology of mothers of infants and in the importance of a spouse or partner to mothers of 6-month olds. The trend of fathers' increasing involvement in parenting is positive; as men become more involved in the day-to-day family care and housework, the demands on working mothers should be lessened. Family Life Educators can support fathers' involvement in parenting as a way to support working mothers, as well as encourage working mothers who are experiencing work-family conflict, depressive symptoms,

or both to address job quality issues with coworkers or supervisors or to consider alternative employment arrangements.

We have argued throughout this paper, however, that work and family microsystems are interconnected. Although changes within the work microsystem or family microsystem are important to the health of mothers of infants, we also need changes at the work-family nexus. When employers provide family-friendly benefits, they support workers in their negotiation of the borders between work and family. For example, greater availability of sick leave that employees can use for the care of sick children would reduce the stress of combining employment with caring for a sick infant.

Government policy can also operate at the intersection of work and family. The current U.S. Family and Medical Leave Act (FMLA) provides 3 months of unpaid leave to eligible employees in covered establishments (U.S. Department of Labor, 1993). According to a survey conducted in 2000 for the Department of Labor, about one third (35%) of working mothers of young children had taken FMLA leave to care for a newborn child or newly adopted child in the previous 18-month period (Waldfogel, 2001). But 80% of FMLA leaves were shorter than 6 weeks (Casta, 2000). Employees reported that they did not take leave because they could not afford it, took a shorter leave for financial reasons, or found it difficult to make ends meet during their leave (Waldfogel, 2001). In a separate study, Hyde, Klein, Essex, & Clark (1995) found that women who took shorter leaves (6 weeks or less) were more likely to experience symptoms of depression than were women who took longer leaves. Changes in public and private parental leave policies that provide paid leave would allow more families to take leaves when needed or to take longer paid leaves.

Addressing the psychological health of working mothers of infants requires a consideration of the full work-family mesosystem, with efforts to improve job quality within the work microsystem, improve support within the family microsystem, and address the work-family interface through family-friendly employee benefits and expanded leave policies that allow families more choices in their navigation of the first few months postpartum.

Note

This research was supported by grant R03OH008351 from the National Institute of Occupational Safety and Health.

References

Aryee, S., Srinivas, E. S., & Tan, H. H. (2005). Rhythms of life: Antecedents and outcomes of work-family balance in employed parents. *Journal of Applied Psychology*, *90*, 132–146.

Bakker, A. B., Demerouti, E., & Dollard, M. F. (2008). How job demands affect partners' experience of exhaustion: Integrating work-family conflict and crossover theory. *Journal of Applied Psychology*, *93*, 901–911.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*, 1173–1182.

Bianchi, S. M., Milkie, M. A., Sayer, L. C., & Robinson, J. P. (2000). Is anyone doing the housework? Trends in the gender division of household labor. *Social Forces*, *79*, 191–228.

Bolger, N., DeLongis, A., Kessler, R. C., & Wethington, E. (1989). The contagion of stress across multiple roles. *Journal of Marriage and the Family*, *51*, 175–183.

Brennan, R. T., & Barnett, R. C. (1998). Negative affectivity: How serious a threat to self report studies of psychological distress? *Women's Health: Research on Gender, Behavior, and Policy*, *4*, 369–384.

Bronfenbrenner, U. (1989). Ecological systems theory. *Annals of Child Development*, *6*, 187–249.

Byron, K. (2005). A meta-analytic review of work-family conflict and its antecedents. *Journal of Vocational Behavior*, *67*, 169–198.

Casta, N. (Ed.). (2000). *Highlights of the 2000 U.S. Department of Labor Report. Balancing the needs of families and employers*. National Partnership for Women and Families. Retrieved December 19, 2008, from http://www.nationalpartnership.org/site/DocServer/2000DOLLaborReportHighlights.pdf?docID=954.

Cho, M. J., Moscicki, E. K., Narrow, W. E., & Rae, D. S. (1993). Concordance between two measures of depression in the Hispanic Health and Nutrition Examination Survey. *Social Psychiatry and Psychiatric Epidemiology*, *28*, 156–163.

Christensen, K. E., & Staines, G. L. (1990). Flextime: A viable solution to work/family conflict? *Journal of Family Issues*, *11*, 455–476.

Clumeck, N., Kempenaers, C., Godin, I., Dramaix M., Kornitzer M., Linkowski P., & Kittel F. (2009).

Working conditions predict incidence of long-term spells of sick leave due to depression: Results from the Belstress I prospective study. *Journal of Epidemiology and Community Health*, *63*, 286 – 292.

Costa, P. T., Jr., & McCrae, R. R. (1985). *The NEO Personality Inventory*. Odessa, FL: Psychological Assessment Resources.

Cummings, E. M., & Davies, P. T. (1994). Maternal depression and child-development. *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, *35*, 73 – 112.

Desrochers, S., & Sargent, L. (2003). *Boundary/border theory and work-family integration*. Retrieved December 19, 2008, from http://wfnetwork.bc.edu/encyclopedia_entry.php?id=220.

Frank, S. J., Olmsted, C. L., Wagner, A. E., Laub, C. C., Freeark, K., Breitzer, G. M., & Peters, J. M. (1991). Child illness, the parenting alliance, and parenting stress. *Journal of Pediatric Psychology*, *16*, 361 – 371.

Frone, M. R., Russell, M., & Cooper, M. L. (1992). Antecedents and outcomes of work family conflict: Testing a model of the work family interface. *Journal of Applied Psychology*, *77*, 65 – 78.

Glass, J., & Camarigg, V. (1992). Gender, parenthood, and job-family compatibility. *American Journal of Sociology*, *98*, 131 – 151.

Grzywacz, J. G., & Marks, N. F. (2000). Reconceptualizing the work-family interface: An ecological perspective on the correlates of positive and negative conflict between work and family. *Journal of Occupational Health Psychology*, *5*, 111 – 126.

Grzywacz, J. G., Rao, P., Woods, C. R., Preisser, J. S., Gesler, W. M., & Arcury, T. A. (2005). Children's health and workers' productivity: An examination of family interference with work in rural America. *Journal of Occupational Health Psychology*, *10*, 382 – 392.

Higgins, C., Duxbury, L., & Lee, C. (1995). Impact of life-cycle stage and gender on the ability to balance work and family responsibilities. In G. L. Bowen & J. F. Pittman (Eds.), *The work and family interface* (pp. 313 – 324). Minneapolis, MN: National Council on Family Relations.

Hill, E. J., Hawkins, A. J., Ferris, M., & Weitzman, M. (2001). Finding an extra day a week: The positive influence of perceived job flexibility on work and family life balance. *Family Relations*, *50*, 49 – 58.

Hyde, J. S., Klein, M. H., Essex, M. J., & Clark, R. (1995). Maternity leave and women's mental health. *Psychology of Women Quarterly*, *19*, 257 – 285.

Karasek, R., & Theorell, T. (1990). *Healthy work: Stress, productivity, and the reconstruction of working life*. New York: Basic Books.

LaPierre, L. M., & Allen, T. D. (2006). Work-supportive family, family-supportive supervision, use of organizational benefits, and problem-focused coping: Implications for work-family conflict and employee well-being. *Journal of Occupational Health Psychology*, *11*, 169 – 181.

Lee, M., Vernon-Feagans, L., Vazquez, A., & Kolak, A. (2003). The influence of family environment and child temperament on work/family role strain for mothers and fathers. *Infant and Child Development*, *12*, 421 – 439.

MacDermid, S. M., & Williams, M. L. (1997). A within industry comparison of employed mothers' experiences in small and large workplaces. *Journal of Family Issues*, *18*, 545 – 566.

Marshall, N. L., & Barnett, R. C. (1993). work-family strains and gains among two-earnet couples. *Journal of Community Psychology*, *21*, 64 – 78.

Marshall, N. L., Barnett, R. C., & Sayer, A. (1997). The changing workforce, job quality and psychological distress. *Journal of Occupational Health psychology*, *2*, 99 – 107.

Montgomery, A. J., Panagopolou, E., & Benos, A. (2006). work-family interference as a mediator between job demands and job burnout among doctors. *Stress and Health*, *22*, 203 – 212.

Murray C. J., & Lopez, A. D. (1997). Alternative projections of mortality and disability by cause 1990–2020: Global burden of disease study. *Lancet*, *349*, 1498 – 1504.

National Center for Health Statistics, Vital and Health Statistics. (2007). *Summary Health Statistics for U.S. Children: National Health Interview Survey, 2006* (Series 10, No. 234). Hyattsville, MD: Centers for Disease Control, Department of Health and Human Services.

NICHD Early Child Care Research Network (NICHD ECCRN). (1994). *Health of child 1 to 15 months. Child care data report –24.* Unpublished report.

NICHD Early Child Care Research Network (NICHD ECCRN). (2001). Child care and common communicable illnesses. *Archives of Pediatrics and Adolescent Medicine*, *155*, 481 – 488.

NICHD Early Child Care Research Network (NICHD ECCRN). (2005). *Child care and child development: Results from the NICHD Study of Early Child Care and Youth Development*. New York: Guilford Press.

Noor, N. M. (1997). Work and family roles in relation to women's well-being: The role of negative affectivity. *Personality and Individual Differences*, *23*, 487 – 499.

Pittman, J. F. (1994). Work/family fit as a mediator of work factors on marital tension: Evidence from the interface of greedy institutions. *Human Relations*, *47*, 183 – 209.

Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, *1*, 385 – 401.

Ross, C. E. (1995). Reconceptualizing marital status as a continuum of social attachment *Journal of Marriage and the Family*, *57*, 129 – 140.

Ross, C. E., & Mirowsky, J. (1995). Does employment affect health? *Journal of Health and Social Behavior*, *36*, 230 – 243.

Schnittker, J. (2007). Working more and feeling better: Women's health, employment and family life, 1974 – 2004. *American Sociological Review*, *72*, 221 – 238.

Segre, L. S., O'Hara, M. W., Arndt, S., & Stuart, S. (2007). The prevalence of postpartum depression: The relative significance of three social status indices. *Social Psychiatry and Psychiatric Epidemiology*, *42*, 316 – 321.

Swanson, N. G., Piotrkowski, C. S., Keita, G. P., & Becker, A. B. (1997). Occupational stress and women's health. In S. Gallant, G. P. Keita, & R. Royak-Schaler (Eds.), *Health care for women: Psychosocial, social and behavioral influences* (pp. 147 – 159). Washington, DC: APA Books.

U.S. Department of Labor. (1993). *Family and Medical Leave Act of 1993: Public Law 103-3*. Washington, DC: U.S. Department of Labor, Employment Standards Administration, Wage and Hour Division.

U.S. Department of Labor. (2004). *Employment characteristics of families*. Press release, April 20, 2004. USDL 04-719. Retrieved May 22, 2004, from http://stats.bls.gov/news.release/pdf/famee.pdf.

U.S. Department of Labor. (2008). *Employment characteristics of families in 2007*. Press release, May 30, 2008, USDL 08-0731. Retrieved November 23, 2008, from http://stats.bls.gov/news.release/pdf/famee.pdf.

Van Rijswijk, K., Bekker, M. H. J., Rutte, C. G., & Croon, M. A. (2004). The relationships among part-time work, work-family interference, and well-being. *Journal of Occupational Health Psychology*, *9*, 286 – 295.

Vazquez, F. L., Blanco, V., & Lopez, M. (2007). An adaptation of the center for epidemiologic studies depression scale for use in non-psychiatric Spanish populations. *Psychiatry Research*, *149*, 247 – 252.

Voydanoff, P. (1989). Work and family: A review and expanded conceptualization. In E. B. Goldsmith (Ed.), *Work and family: Theory, research and applications* (pp. 1 – 22). Newbury Park, CA: Sage.

Waldfogel, J. (2001). Family and medical leave: Evidence from the 2000 surveys. *Monthly Labor Review*, *124*, 17 – 23.

Westman, M., & Piotrkowski, C. S. (1999). work-family research in occupational health psychology. *Journal of Occupational Health Psychology*, *4*, 301 – 306.

Wortman, C. B., Biernat, M. R., & Lang, E. L. (1991). Coping with role overload. In M. Frankenhauser, U. Lundberg, & M. Chesney (Eds.), *Women, work and health: Stress and opportunities* (pp. 85 – 110). New York: Plenum.