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Youth Supervision While Mothers Work: A Daily Diary Study of Maternal Worry

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Abstract

Using data from a daily diary study of hourly hotel employees in the U.S. and their children, this study examined links between youth supervision arrangements and maternal worry while at work, examining both differences *between* individuals and day-to-day variation *within* individuals. Multilevel model analyses revealed both between- and within-person effects linking youth supervision to maternal worry. Mothers' partner status functioned as moderator, and maternal knowledge also emerged as a protective factor when youth were in self-care, highlighting a potential target for future work-family interventions, particularly those for hourly employees with limited access to family-friendly workplace policies.

En utilisant les données d'une étude de journal quotidien des employés horaires de l'hôtel aux États-Unis et leurs enfants, cette étude a examiné les liens entre les modalités de supervision des jeunes et l'inquiétude maternelle pendant le travail, en examinant à la fois les différences inter individus et la variation intra individus au jour le jour. Analyses multi-niveaux ont révélé à la fois des effets inter et intra reliant la supervision des jeunes à l'inquiétude maternelle. Statut de partenaire des mères a fonctionné en tant que modérateur, et la connaissance maternelle est également apparue comme un facteur de protection lorsque les jeunes ont pris soins d'eux-mêmes, soulignant une cible potentielle pour des interventions de conciliation travail-famille, en particulier ceux conçus pour des employés horaires avec un accès limité à des politiques favorables à la famille.

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Since the 1950s, there have been significant increases in the number and proportion of dual-earner families in the U.S., largely due to an increase in employed mothers (Jacobs & Gerson, 2001; Raley, Mattingly, & Bianchi, 2006). Maternal employment may make it challenging for some mothers to negotiate their work and family roles and responsibilities, which can be problematic for individuals, families, and workplaces (Allen, Herst, Bruck, and Sutton, 2000). One form of work-family conflict that has shown to be detrimental at both the home and workplace is parents' concern about their children's supervision arrangements while they are working (Barnett & Gareis, 2006a; Barnett & Gareis, 2006b).

As maternal employment and the corresponding potential for work-family conflict have increased, research on children's non-maternal care arrangements has proliferated. Much of this research has focused on younger children, but some work has begun to examine the after-school activities and supervision arrangements of older children and adolescents. This research suggests that some arrangements may be problematic for youth (e.g., Aizer, 2004;

Coley, Morris, & Hernandez, 2004; Eccles, Barber, Stone, & Hunt, 2003; Mott, Crowe, Richardson, & Flay, 1999), and a handful of studies indicates that some arrangements may also be problematic for parents (Barnett & Gareis, 2006a; Barnett & Gareis, 2006b). For example, a recent study documented links between children's unsupervised time after school and parents' concerns about their children (Barnett & Gareis, 2006b). This research, however, along with the majority of research on work-family conflict, was conducted on middle class and professional workers; less is known about work-family conflict, and specifically maternal worry, among working class, hourly employees (Lambert, 1999). It is important to better understand maternal worry as a reflection of work-family conflict within this population, given the negative implications of maternal worry for mothers' well-being and workplace productivity (Barnett & Gareis, 2006a; Barnett & Gareis, 2006b; Glass & Estes, 1997), as well as the possibility that these mothers worry the most about their youth, given the myriad challenges these families face. A better understanding of maternal worry in this population may also provide insight on how to improve the work-family interface for these families. This paper takes an ecological approach (Bronfenbrenner, 1986) to understanding maternal worry by focusing on the mother's exosystem and specifically examining the role of youth supervision arrangements while mothers work using a sample of U.S. mothers employed in low-level jobs in the hotel industry.

Supervision Arrangements

The increase in maternal employment has been accompanied by an increase in non-maternal care. One U.S. study of 30,000 school-age youth in 2008-2009 found that youth spent their time in a diversity of arrangements: 70% spent time after-school with a parent or guardian; 26% spent time in self-care; 24% spent time with another adult relative; 15% spent time in an after-school program; 14% spent time with a sibling; 10% spent time with another adult who was not a relative; and 10% spent time in a childcare center (Afterschool Alliance, 2009). Self-care, an arrangement in which children do not have adult supervision and are responsible for their own care, is not uncommon, especially for older children and youth (Casper & Smith, 2004; Vandivere, 2003): 30% of youth in middle school and 55% of youth in high school spent time after school in self-care in 2008-2009 (Afterschool Alliance, 2009).

Implications of Supervision Arrangements and After-School Activities for Youth Outcomes

Little is known specifically about the implications of youths' supervision arrangements while their mothers work, but inferences can be made from extant research on how youth spend their time out of school. Whereas some out-of-school arrangements are associated with problematic youth outcomes, others appear to affect adolescents' development positively (Durlak & Weissberg, 2007). For example, adolescents who were involved in the performing arts and prosocial activities (e.g., church and volunteer activities) were less likely to subsequently engage in risky behaviors, such as drinking, drug use, and skipping school, than adolescents who did not participate in these activities (Eccles et al., 2003). Similarly, participation in prosocial activities, team sports, the performing arts, and school activities and clubs was associated with better academic outcomes, whereas adolescents who participated in team sports were more likely to be involved in risky behaviors compared to non-athletes (Eccles et al., 2003).

Research also shows that self-care can be a problematic arrangement for youth. Qualitative and quantitative studies have documented the negative implications of self-care for youth risky behavior (e.g., Aizer, 2004; Belle, 1999; Roche, Astone, & Bishai, 2007), especially when youth spend unsupervised time with peers (e.g., Pettit, Bates, Dodge, & Meece, 1999). For example, adolescents who spent more hours in self-care per week and those who spent more time unsupervised hanging out with friends were more likely to smoke cigarettes (Mott

et al., 1999). In contrast, youth aged 10-14 were less likely to skip school, drink alcohol, use drugs, steal, or hurt someone when they had adult supervision (Aizer, 2004).

Whereas links between youth supervision or activities and psychosocial functioning have been identified, extant research does not allow us to make causal inferences about the direction of these links. It may be that certain supervision arrangements result in more positive or negative youth outcomes, but it is also possible that youth with problems (or their parents) select certain supervision arrangements. Research designs that aim to control for selection effects are needed to clarify these links.

Existing research also does not account for the dynamic nature of youth supervision. Belle's (1999) qualitative study of the after school lives of youth while their parents work revealed that youths' supervision arrangements often change day to day. For example, one parent mentioned that on Mondays her daughter was unsupervised until she had track practice, on Tuesdays and Thursdays she was unsupervised, on Wednesdays she had jazz class at school, and on Fridays she was alone until she picked up her younger brother and watched him until her mother came home. Belle's findings underscore the need to focus on day-to-day variability in supervision arrangements and outcomes.

Maternal Worry about Children's Supervision Arrangements

Parents' concerns about their children's after-school hours have been negatively associated with parents' psychological well-being (Barnett & Gareis, 2006a) as well as job disruptions (Barnett & Gareis, 2006b) and workplace productivity (Glass & Estes, 1997). Little is known, however, about which youth supervision arrangements are most closely associated with maternal worry. In Belle's (1999) qualitative study, one mother, discussing her daughter's unsupervised time, explained, "It puts more pressure on me worrying about what she's doing in the afternoon. From 3 p.m. on, I can't be totally relaxed" (p. 87). A survey of parents working at a leading global financial services corporation revealed that parental worry was higher among parents of children who spent more time unsupervised after school (Barnett & Gareis, 2006b). No known research, however, has examined a range of supervision arrangements in relation to parental worry. Given the varying implications of different youth activities and supervision arrangements for youth outcomes, mothers may experience more or less worry depending on their children's supervision arrangements. For example, mothers may worry more about supervision arrangements in which youth are more likely to engage in risky behavior, such as self-care.

There may also be some conditions under which mothers' worry is exacerbated or attenuated. Both youth characteristics, such as age and gender, and mothers' circumstances, such as partner status, may have implications for the links between supervision arrangements and maternal worry. Given that boys and older adolescents engage in higher levels of risky behavior than girls and younger youth (e.g., Byrnes, Miller, & Schafer, 1999; Hirschi & Gottfredson, 1983; Osgood, 1991), mothers may worry more about boys and older adolescents in certain supervision arrangements. Although Barnett and Gareis (2006b) did not find interactions between child age and gender and unsupervised time in predicting parents' after-school concern, these interactions may be apparent for other supervision arrangements. Research also shows that single mothers often struggle with child care and work-family conflict (e.g., Ciabattari, 2007); a lack of support from partners among single working mothers may result in partner status affecting how mothers respond to different youth supervision arrangements.

Furthermore, how much mothers know about their children's experiences while they work and their children are in different supervision arrangements may either exacerbate or attenuate their worry. Extensive research has demonstrated that higher levels of parental

knowledge about children's experiences are associated with more favorable youth outcomes. Specifically, more parental knowledge is associated with less youth risky behavior, including substance abuse, sexual activity, and encounters with police, as well as better school performance (e.g., Crouter & Head, 2002; Stattin & Kerr, 2000; Waizenhofer, Buchanan, & Jackson-Newsom, 2004). Furthermore, research suggests that the negative associations of self-care may be mitigated by parental knowledge. For example, higher levels of parental knowledge were linked to lower rates of problem behavior more so for adolescents who were unsupervised outside of their home compared to adolescents in other supervision arrangements (Coley et al., 2004). This work has demonstrated a protective effect of parental knowledge for youth outcomes, but research has not examined maternal knowledge as a potential protective factor for *maternal* outcomes. In this study we tested whether mothers worried less about children even in less positive supervision arrangements if they knew more about their children's experiences.

The Daily Diary Approach to Supervision Arrangements and Maternal Worry

As mentioned previously, the vast majority of existing research treats youth supervision arrangements as fixed and unchanging. However, many children spend time in more than one type of after-school care (Afterschool Alliance, 2009), and, for some youth, supervision arrangements even change day to day. To fully understand the implications of youth supervision arrangements, this potential daily variability must be understood and taken into account.

A daily diary method provides a level of detail on supervision arrangements and maternal worry that has been lacking to this point. This method provides repeated assessments across multiple days to measure continuity and day-to-day variation. Using daily diaries, we can examine how people differ from each other (between-person differences) as well as how people change day to day (within-person differences) and how someone's experiences on a particular day contribute to their behavior on that day and vice versa (Bolger, Davis, & Rafaeli, 2003).

When linking youth supervision to maternal worry it is also important to consider the issue of selection effects: Certain mothers may be more likely to rely on certain supervision arrangements for their children, and these mothers may also be more likely to worry. The daily diary design, with its emphasis on intraindividual variability, controls for stable characteristics of respondents, such as personality or socioeconomic status, when examining the associations between daily arrangements and daily worry. Each person, in a sense, serves as their own control, thereby reducing selection bias and providing a stronger test of the associations between study variables (Bolger et al., 2003). In addition, given that the unit of analysis is days (not individuals) for within-person effects, the larger sample size enhances the power to detect significant effects.

Research Questions

Given the paucity of research that takes into account selection effects and the day-to-day variability of supervision arrangements of older children, particularly those in lower income families, this study took a daily diary approach to examine the following research questions:

1. How are youth, aged 10-18, supervised while their mothers work? How much day-to-day variability exists in these supervision arrangements?
2. Does within-person and between-person variability in youth supervision arrangements explain variations in maternal worry?
3. Do these associations vary as a function of youth characteristics (e.g., age or gender), mother circumstances (e.g., partner status), or parental knowledge?

Method

Participants

Data came from the Hotel Work and Well-Being Study of hourly hotel employees in full-service hotels across the U.S. Hotels were chosen to represent a service industry that operates 24 hours a day, 7 days a week. Specific geographic areas were selected and full-service hotels in these areas were invited to participate in the study; approximately 77 hotels agreed to participate. Through onsite recruitment, 157 hourly employees originally expressed an interest in participating in the study. Of those employees, interviewers were only able to reach 105 people who met eligibility requirements. Criteria were that participants: (a) worked in hourly (not salaried) positions, such as housekeeping, food and beverage, and the front desk; (b) were proficient in English; and (c) had a child between the ages of 10 and 18 who resided at their home and who would be allowed to and willing to participate. Of the 105 eligible participants, 77 (73%) completed a baseline telephone survey.

Following the baseline survey, hourly hotel employees and their 10-18 year old biological or adopted children were recruited to participate in the daily diary study. Seventy-two hourly employees completed the baseline survey and at least part of the eight-day diary (94%). Seventy-nine percent of the hourly parents were mothers. Because mothers and fathers may respond differently to work and family roles (e.g., Grzywacz & Marks, 2000), and because there was an insufficient number of fathers to make mother-father comparisons, the analyses were restricted to mothers ($N = 57$). Mother interviews were completed on a total of 367 days. These analyses focus on the 265 days that were work days. Mothers worked an average of 4.65 days ($SD = 1.34$).

Mothers were 39.30 years old on average ($SD = 7.61$), and their median income was \$25,000 a year (Range = \$1,525 to \$45,000). Most mothers were non-White (85.96%) and neither married nor cohabiting (54.39%). Most mothers had at least a high school education (89.48%). Participating children were 13.61 years of age ($SD = 2.27$) on average, and slightly more than half (56.86%) were boys.

Procedures

After a baseline telephone survey on work and family responsibilities, health, well-being, and background information, mothers and youth were telephoned on eight consecutive evenings and asked to report on their daily experiences. Before participating, youth were asked to confirm their willingness to participate by giving their verbal assent, which was provided in addition to the parent's written consent for their participation. Parents and youth were compensated with a \$50 gift card.

Measures

Supervision Arrangements—Were measured by asking mothers, “When you were working at the hotel today, who was supervising or watching your child?” Response options were other parent; brother(s) and/or sister(s); no one - child was on own; a relative (other than parents or siblings); a neighbor or friend; babysitter; formal care arrangement (e.g., community program, camp, or after school program); participated in activities (e.g., sports, lessons, clubs); attended school; worked at a paid job; and other. Interviewers read the list of responses and participants were asked to select all arrangements that applied. Each response category was dummy coded into a dichotomous (yes, no) variable for each day. Due to low frequencies, the “participated in activities” ($n = 3$ days) and “worked at a paid job” ($n = 3$ days) codes were not included; “other parent” ($n = 33$ days) and “a relative” ($n = 33$ days) were combined; and “friend or neighbor” ($n = 12$ days), “babysitter” ($n = 3$ days) and

“formal care arrangement” ($n = 8$ days) were combined. The school code was excluded in order to focus on youth supervision outside of school. Thus, the four supervision arrangements examined were (a) child was on his/her own (self-care); (b) sibling supervision; (c) family member other than the mother or siblings; and (d) non-family supervision arrangement.

Maternal Worry—Was measured using 4 questions adapted from Barnett and Gareis (2006a). Each day mothers were asked how worried they had been about their child that day (e.g., “How much did you worry about how well supervised your child was while you were not around him/her today?”). Mothers responded on a 4-point scale (0 = *Not at all*; 3 = *A lot*). Responses were averaged, and higher scores indicate greater maternal worry ($\alpha = .94$).

Potential moderator and control variables—Included *child gender*, which was obtained in the child daily diary, *child age* and mother's *partner status*, which were obtained in the hourly worker baseline interview, and *parental knowledge*, which was assessed in the hourly worker daily diary. *Child gender* was coded as 0 = male and 1 = female. *Partner status* was coded as 0 = single and 1 = married or cohabiting. *Parental knowledge* was measured using 4 questions that were adapted from Stattin and Kerr (2000). Each day mothers were asked to rate how much they knew about how their child had spent his/her free time, who their child had hung out with, where their child had gone, and how well their child had behaved that day, using a 4-point scale (0 = *Almost nothing*; 3 = *A lot*). Responses to the four items were averaged; higher scores indicate higher levels of parental knowledge ($\alpha = .79$). Although parental knowledge varied slightly more within mothers than between mothers ($ICC = .40$), we averaged daily scores to examine parental knowledge as a between-person moderator so that it reflected a more stable characteristic of the parent-child relationship.

Results

Supervision Arrangements

Descriptive data on youth supervision arrangements appear in Table 1. Comparing the different supervision arrangements across the workdays, the most common supervision arrangement was supervision by a family member (i.e., father or another relative): 47.37% of youth spent time supervised by a family member, and youth spent an average of 1.21 days in family supervision. Non-family supervision was the least common arrangement: 19.30% of youth spent time in non-family supervision, and youth spent an average of .40 days in non-family supervision. Across the work days, youth experienced between zero and three of the four arrangements examined ($M = 1.30$, $SD = .65$), but only on five days (1.89% of days) did youth participate in more than one supervision arrangement per day, suggesting that youth supervision arrangements may vary across days, but may not vary much within a given day.

Intraclass correlations (see Table 1) were calculated to examine between- versus within-person variation for each supervision arrangement. Intraclass correlations for non-family supervision indicated more within-person variation than between-person variation. Intraclass correlations for self-care and supervision by a family member indicated about equal between- and within-person variation. Finally, intraclass correlations for sibling supervision indicated slightly more between-person variation than within-person variation. Overall, these findings indicated at least as much within-person as between-person variation for most supervision arrangements, suggesting that supervision arrangements are dynamic, not stable. The intraclass correlation for maternal worry indicated that worry also varied to some extent within individuals, suggesting that it is not entirely a stable characteristic of individuals.

These findings underscore the need to examine day-to-day variation in youth supervision and maternal worry.

The correlation matrix in Table 1, using stacked data (each person has multiple rows of data representing the days of the diary study) for supervision arrangements and maternal worry and between-person variables (1 value per person) for moderator and control variables, shows negative correlations between the supervision arrangements, suggesting that when youth spent time in one arrangement, they were less likely to spend time in other arrangements. Bivariate correlations also indicated that when youth were on their own, mothers worried more, but that when youth were with a family member, mothers worried less. Maternal knowledge was also negatively associated with maternal worry. In addition, mothers worried more about older children, and married or cohabiting mothers worried less about their children than did single mothers. Youth gender was not significantly associated with any supervision arrangements or maternal worry, and thus was dropped from subsequent analyses.

Supervision Arrangements Predicting Maternal Worry

Two-level multi-level models (days nested within individuals) were estimated using between- and within-youth supervision variables to predict maternal worry. Data across work days were averaged for between-person effects. For within-person effects, each person's mean was subtracted from their response for each workday. We included between-person effects in all models along with within-person effects, thereby reducing selection bias. Supervision arrangements were included in models one at a time, and main effects of supervision arrangements (both between- and within-person effects) were examined along with interactions between supervision arrangements and child age, mothers' partner status, and maternal knowledge. Interactions were first run one at a time, and only interactions that were significant at $p < .10$ were included in the final models (see Table 2). Follow-up analyses for interactions significant at $p < .05$ in the final models were conducted by examining groups separately for dichotomous variables (e.g., partner status) and by comparing groups one standard deviation above and below the mean for continuous variables (e.g., maternal knowledge) as specified by Aiken and West (1991). As mentioned above, given their significant correlations with maternal worry, child age, mothers' partner status, and maternal knowledge were included as controls in all models.

Between-Person Effects (Individual Differences)—As can be seen in Table 2, consistent with previous research, results indicated that on work days, mothers worried more about youth who spent more days in self-care compared to youth who spent fewer days in self-care. Mothers also worried more about youth who spent more days in non-family supervision compared to youth who spent fewer days in this arrangement. In contrast, mothers worried less about youth who spent more days in family supervision compared to youth who spent fewer days in family supervision.

Within-Person Effects—Next, we examined within-person differences, looking at variation between days, within people. Also shown in Table 2, mothers worried less on days when their children spent time supervised by their siblings compared to days when they were not supervised by their siblings. In contrast to the between-person effect mentioned above, mothers also worried less on days when their children were in non-family supervision compared to days when they were not. This effect was qualified by an interaction with mother's partner status, however. Follow-up analyses revealed that single mothers worried less on days when their children were in non-family supervision compared to days when their children were not in non-family supervision ($\gamma = -.48, p = .05$), but this link was not significant for married or cohabiting mothers ($\gamma = .34, ns$; see Figure 1).

Maternal Knowledge as a Protective Factor

In all models, main effect findings indicated that higher levels of maternal knowledge were linked to lower levels of maternal worry (see Table 2). Two significant interactions between maternal knowledge and supervision arrangements also emerged: An interaction between self-care (between-person effect) and maternal knowledge and an interaction between non-family supervision (within-person effect) and maternal knowledge. Follow-up analyses suggested parental knowledge was a protective factor for mothers of youth who spent more days in self-care. As shown in Figure 2, for mothers with low parental knowledge, the more days their children spent in self-care, the more they worried ($\gamma = 1.29, p < .01$), but this association was not significant for mothers with high parental knowledge ($\gamma = .15, ns$); the latter group consistently reported low levels of worry regardless of the number of days their youth spent in self-care. Similarly, as shown in Figure 3, mothers with high parental knowledge reported low levels of worry regardless of non-family supervision ($\gamma = .21, ns$); in contrast, mothers with low parental knowledge worried less on days when their children spent time in non-family supervision compared to days when they did not ($\gamma = -1.15, p < .001$).

Discussion

The sometimes competing responsibilities of motherhood and work can increase women's experiences of work-family conflict. Worrying about their children and how they are supervised during their work hours is one example of work-family conflict that has potentially significant, negative implications for mothers and their workplaces. Given the limited research on the supervision arrangements of adolescents while their mothers work, and the limited work-family research that studies lower income families, this research made an important contribution towards understanding youth supervision arrangements and their links with maternal worry by examining daily variation in youth supervision, linking supervision arrangements to maternal worry, and addressing the potential protective effect of parental knowledge in a sample of hourly hotel workers.

Most importantly, this study demonstrated that youth supervision arrangements while mothers work matter for maternal worry. Importantly, parental knowledge was shown to play a protective role in some cases. Capitalizing on the strengths of the daily diary design, this study also revealed day-to-day variability in youth supervision arrangements and significant correlates of both between- and within-person variation. The results of this investigation have implications for future intervention research on workers and their families.

Supervision Arrangements and Maternal Worry

This study revealed links between supervision arrangements and maternal worry, suggesting that some supervision arrangements, such as self-care, are more problematic than others for mothers. In contrast, arrangements such as supervision by a family member appeared to attenuate maternal worry. In addition, the implications of non-family supervision arrangements for maternal worry varied as a function of mothers' partner status.

Considering the negative implications of self-care for risky behavior reported in previous investigations (e.g., Aizer, 2004; Belle, 1999; Pettit et al., 1999; Roche et al., 2007), it was not surprising to find that mothers worried more about youth in self-care. This finding is also consistent with Barnett and Gareis' (2006b) finding that parents worried more when they had youth who spent more time unsupervised after school. It may be the case that parents worry more about their youth in self-care because youth may have more opportunities to get into trouble in these circumstances.

Additionally, non-family supervision was problematic: A between-person effect revealed more maternal worry about youth who spent more days in non-family supervision. Maternal worry about non-family supervision may be a result of mothers having less awareness of and control over their children's experiences in these arrangements in comparison to supervision by family members. Therefore, they may be less trusting of and comfortable with non-family supervision and worry more about their children.

In contrast, a within-person finding indicated that non-family supervision was associated with less maternal worry at the daily level. This main effect was qualified by an interaction, however, which suggested that compared to days when their children did not spend time in non-family supervision, on days when their children spent time in non-family supervision, only single mothers, not married or cohabiting mothers, worried less. This unique association for single mothers may be due to the available alternatives for these families on days when their children are not in non-family supervision. Single mothers, not having the option of supervision by a spouse or partner as do married or cohabiting mothers, may only have self-care as an alternative, in which case they might worry less when their children are in non-family supervision.

In contrast to non-family supervision, supervision by a family member may be less detrimental for maternal worry because mothers may be more trusting of the supervision provided by their own family members. A parallel finding for sibling supervision at the daily level also emerged: Mothers worried less on days when youth were supervised by their siblings.

The Protective Role of Parental Knowledge

Despite problematic associations of some supervision arrangements for maternal worry, findings revealed potential benefits of maternal knowledge. Main effect findings indicated that higher levels of knowledge were associated with less maternal worry. In addition, moderation analyses demonstrated maternal knowledge to be a potential buffer for maternal worry for mothers with children in self-care. For mothers with high knowledge, worry was consistently low, and self-care was not linked to maternal worry. In contrast, for mothers with low knowledge, self-care was linked to higher levels of worry. These findings indicate that higher maternal knowledge may attenuate mothers' anxiety and concerns when youth are in self-care, thereby serving as a protective factor for maternal worry.

In addition, a somewhat puzzling interaction emerged between maternal knowledge and non-family supervision: On days when youth spent time in non-family supervision, mothers with low knowledge worried less compared to days when their children did not spend time in non-family supervision. This finding may reflect the within-person nature of this effect indicating a difference in non-family supervision compared to what is “normal” for that person. If “normal” is self-care for mothers with low knowledge, then reduced worry on non-family supervision days could be expected. Despite this finding for mothers with low knowledge, mothers with high knowledge consistently worried less, regardless of whether the child was in non-family supervision on a given day, further indicating the buffering effect of maternal knowledge.

Day-to-Day Variation in Youth Supervision Arrangements

The daily diary design was a key strength of this study, allowing us to examine day-to-day variability in youth supervision arrangements and to study within-person as well as between-person associations. Compared to more typical between-person approaches, the within-person approach provided much needed detail that has been lacking. Analyses revealed substantial day-to-day variability in how youth were supervised, indicating that supervision

is a dynamic phenomenon – a point that has been generally given short shrift in previous research. By examining multiple supervision arrangements in the daily diary, we were also able to assess variability within a given day. Although multiple supervision arrangements within a day were rare in this sample, researchers should continue to ask about this possibility.

In addition, both between- and within-person effects linking youth supervision arrangements to maternal worry emerged, highlighting implications of differences between people as well as day-to-day changes in supervision arrangements. We are particularly confident of the within-person effects found in this study because these models in effect held constant stable, unexamined characteristics of the respondents (e.g., personality, social class), thereby reducing selection bias and providing a better estimate of the links between youth supervision and maternal worry.

Limitations and Future Directions

Despite the strengths of the daily diary design, findings from this study were based on a small sample of mothers who were hourly workers with relatively low autonomy in the hotel industry. Even though this is an important group to study given their underrepresentation in the literature, generalizability is not possible, and the small sample size reduces the power to detect effects that might have been significant in a larger sample, especially in the analyses of between-person effects. Future research should examine a larger sample of workers in a variety of industries to expand generalizability. It would also be beneficial to include fathers and assess the impacts of supervision arrangements on both parents' worry. Studies with larger samples should also study worry as a mediator between youth supervision arrangements and parents' work productivity and well-being.

It is also important to acknowledge that our measure of maternal knowledge was a self report and may reflect mothers' perceptions of being knowledgeable rather than their actual knowledge. While self-report is a common measure of parental knowledge, further research is needed to determine if actual knowledge similarly serves as a protective factor for maternal worry, a distinction that would be important for intervention research.

Implications for Interventions

Despite limitations due to a small sample size and potential measurement issues, this research suggests several promising targets for future interventions and intervention research for hourly workers and their families, including youth supervision arrangements and maternal knowledge. Interventions for lower income, hourly workers are particularly important, because, at least in the U.S., these workers typically have little access to family-friendly workplace policies (Lambert, 2009), and may experience at least as much, if not more, work-family conflict compared to middle class families. Findings from this study related to youth supervision arrangements suggest that it would be beneficial in terms of maternal worry for youth to spend more time supervised by a family member, including a sibling, and less time in self-care or in non-family supervision. Given that high quality non-family supervision arrangements are lacking for older children and adolescents in the U.S. (e.g., Aizer, 2004; Durlak & Weissberg, 2007), efforts could also be made to improve the quality of non-family supervision so mothers worry less about their offspring who spend time in these settings. Such arrangements could include after-school programs for older children that are structured, supervised, and suitable to youths' interests. Research suggests that programs and activities with these characteristics, and those that incorporate positive interactions with adults and peers and promote personal and social skills have positive benefits for youth (Durlak & Weissberg, 2007; Mahoney & Stattin, 2000). When their

children are in these positive and beneficial arrangements, mothers may worry less while they are at work.

Given potential difficulties of modifying supervision arrangements, interventions aimed at increasing maternal knowledge may reduce maternal worry while mothers work, especially for youth in self-care. Interventions that improve mother-child relationships and foster mother-child communication, such as the Strengthening Families Program (Molgaard & Spoth, 2001), may increase how much mothers ask about their children's activities and how much youth disclose to their mothers about their activities, thereby increasing how much mothers know about their children's experiences (Stattin & Kerr, 2000). Increasing maternal knowledge, or mothers' perceptions of knowledge, may also be as simple as encouraging workplaces to allow mothers, especially hourly workers who may have limited telephone access at work, to call their children or receive phone calls from their children while they are at work. Future intervention and workplace policy research should consider these options as a means of reducing maternal worry while mothers work, thereby reducing one form of work-family conflict and perhaps, in turn, improving worker productivity and well-being.

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Figure 1.
Daily Maternal Worry as a Function of the Interaction between Daily Levels of Non-Family Supervision (Within-Person Effect) and Mothers' Partner Status (n = 57 mothers, 265 days)

Figure 2.
Overall Maternal Worry as a Function of the Interaction between Overall Levels of Self-Care (Between-Person Effect) and Maternal Knowledge (n = 57 mothers, 265 days)

Figure 3.
Daily Maternal Worry as a Function of the Interaction between Daily Levels of Non-Family Supervision (Within-Person Effect) and Maternal Knowledge (n = 57 mothers, 265 days)

Table 1

Correlations (Intraclass Correlations), Percentages, Means, and SD for Study Variables ($n = 57$ mothers, 265 days)

Variables	1	2	3	4	5	6	7	8	9
1. Self-care	(.53)								
2. Sibling	-.20**	(.58)							
3. Family member	-.30***	-.21***	(.53)						
4. Non-family	-.16**	-.12*	-.06	(.36)					
5. Maternal worry	.25***	.05	-.23***	.04	(.64)				
6. Maternal knowledge	.04	-.01	.05	.03	-.23***	—			
7. Youth age	.34***	.03	-.23***	-.19***	.22***	.18**	—		
8. Youth gender	.01	-.06	.01	.01	-.02	-.09	-.01	—	
9. Partner status	-.26***	-.04	.07	-.01	-.18**	-.05	-.12	-.08	—
% Involved	38.60	24.56	47.37	19.30	—	—	—	—	—
Mean number of days	.96	.61	1.21	.40	—	—	—	—	—
(SD)	(1.53)	(1.24)	(1.71)	(1.03)					

Note: Variables 1-5 are stacked variables (daily data); variables 6-9 are between-person variables (1 value per person). Intraclass correlations are in parentheses on the diagonal. Gender is coded 0 = male, 1 = female; Partner status is coded 0 = single, 1 = married or cohabiting.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 2

Multilevel Model Results Predicting Maternal Worry from Supervision Arrangements and Interactions with Moderators ($n = 57$ mothers, 265 days)

	Self-Care		Sibling		Family Member		Non-Family	
	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE
Supervision (Between)	.72 [*]	.31	.25	.34	-1.03 ^{***}	.38	1.50 [*]	.70
Supervision (Within)	-.04	.13	-.50 [*]	.20	-.17	.13	-.47 [*]	.22
Youth Age	.04	.04	.07 [†]	.04	.04	.04	.11 [*]	.04
Partner Status	-.17	.19	-.25	.19	-.23	.18	-.31	.18
Maternal Knowledge	-.34 [*]	.15	-.32 [*]	.16	-.39 [*]	.16	-.42 [*]	.16
Sup. (Btw) *Youth Age	—	—	—	—	—	—	.60 [†]	.32
Sup. (W/in) *Youth Age	—	—	—	—	-.10 [†]	.05	—	—
Sup. (Btw) *Partner Status	—	—	—	—	1.08 [†]	.57	—	—
Sup. (W/in) *Partner Status	—	—	.71 [†]	.38	—	—	.81 [*]	.33
Sup. (Btw) *Knowledge	-.98 [*]	.46	—	—	—	—	-2.00 [†]	1.17
Sup. (W/in) *Knowledge	—	—	—	—	—	—	1.17 ^{***}	.34

Note: Partner status is coded 0 = single, 1 = married or cohabiting.

[†] $p < .10$.

^{*} $p < .05$.

^{**} $p < .01$.

^{***} $p < .001$.