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Implications of parents' work travel on youth adjustment

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Abstract

Guided by ecological, work–family spillover and crossover frameworks, this study examined mechanisms linking parental work travel (i.e. nights per year) to youth adjustment (i.e. externalizing and internalizing behaviors) through youth's perceptions of parenting (i.e. knowledge, solicitation) with traveler and youth gender as moderators in a sample of 78 children in 44 two-parent families residing in the United States. The findings from multilevel analyses suggested that mothers' travel nights predicted lower levels of maternal knowledge, with variation by traveler and youth gender. Mothers' and fathers' work travel and perceived parenting were predictors of youth's externalizing behaviors, whereas only fathers' work travel and perceived parenting were predictors of youth's internalizing behaviors. Tests of indirect effects indicated that maternal work travel linked to youth's externalizing behaviors through youth's perceptions of maternal knowledge. These findings add to our limited understanding of work–family issues for parents who have the unique work demand of frequently travelling.

Resumen

Guiados por marcos ecológicos, trabajo-familia y modelo crossover. Este estudio examinó los mecanismos que vinculan los viajes del trabajo de los padres (es decir,

noches por año) en la adaptación de los jóvenes (es decir, comportamientos externalizados e internalizados) a través de las percepciones de los jóvenes sobre la crianza de los hijos (es decir, el conocimiento, la solicitud) con el género de viajero y la juventud como moderadores, una muestra de 78 niños en 44 familias ambos padres residentes de los Estados Unidos. Los hallazgos de los análisis multinivel sugirieron que las noches de viaje de las madres predijeron niveles más bajos de conocimiento materno, con variación del género de viajero y de la juventud. Los viajes de trabajo de las madres y los padres y la percepción de los padres fueron predictores de los comportamientos de externalización de los jóvenes, mientras que sólo los viajes de trabajo de los padres y la percepción de los padres eran predictores de los comportamientos de internalización de los jóvenes. Las pruebas de los efectos indirectos indicaron que el viaje del trabajo materno está relacionado con los comportamientos de externalización de los jóvenes a través de las percepciones de los jóvenes sobre el conocimiento materno. Estos hallazgos agregan a nuestra comprensión limitada de los problemas trabajo-familia para los padres que les demanda viajar con frecuencia debido a que tienen un trabajo único.

Keywords: Children's adjustment, multilevel modelling, parenting, parents' work travel, work and families

Palabras Clave: Adaptación de los niños, modelización multinivel, paternidad, trabajo de los padres, trabajo y familias

Parents' work stress has been identified as risk factor associated with lower quality family dynamics and, in turn, youth maladjustment problems (see Bianchi & Milkie, 2010 for review). Parents' stressful work experiences appear to distally link to poor youth adjustment through the sequential effects on ineffective parenting (Bianchi & Milkie, 2010). Such findings raise concerns, as a specific work demand, work-related travel, has become an increasingly relevant and taxing experience for workers (Davidson & Cope, 2003). Research has largely overlooked parents' work travel in examining children's adjustment, as evidenced by no references to this domain in recent reviews of work-family research (Bianchi & Milkie, 2010; Perry-Jenkins & Wadsworth, 2013). Thus, this study examined mechanisms that link both mothers' and fathers' work travel to youth adjustment in two-parent families.

Ecological perspectives (Bronfenbrenner & Morris, 2006) and models of work-family spillover and crossover (e.g. Moen, Kain, & Elder, 1983; Westman, Etzion, & Chen, 2009) guided this study. Ecological perspectives emphasize the importance of interrelations among proximal and distal settings that foster or interfere with individual adjustment. Parents' work is an important distal setting that plays a role in youth adjustment. Theoretical and empirical literature has identified specific elements of parental work that relate to youth well-being (e.g. Bianchi & Milkie, 2010; Moen et al., 1983). Conceptual models of work-family spillover and crossover further detail how work

relates to family life, through a process whereby one's participation in one setting (e.g. work) relates to one's participation in another setting (e.g. family), and, in turn, to one's own and others' (e.g. family members) outcomes in that setting (Westman et al., 2009). Research has found the transmission of mood or stress from one domain or person to another to be mechanisms of work–family spillover and crossover, respectively (e.g. Westman et al., 2009). Parents' demanding work experiences may elicit stress reactions taxing parents' resources and coping mechanisms, and distracting parents from the needs of their children, resulting in poor child adjustment (Bianchi & Milkie, 2010).

Integrating these perspectives, this study investigated the link between a specific element of the parental work setting, travel (i.e. the total number of nights parents were away from home during the last year), and youth adjustment (i.e. externalizing and internalizing behaviors as indicators of poor adjustment), and the role of parenting (i.e. parental knowledge, solicitation) as an intervening factor. Moreover, as guided by research on the salience of gender norms related to family roles (see Murry, Mayberry, & Berkel, 2013 for review) and ecological perspectives (Bronfenbrenner & Morris, 2006) that suggest the importance of same-gender parent-youth dyads for development, we examined traveler and youth gender as moderators. This study extends the literature that has primarily focused on individual workers to examine *both* parents' work travel within *and* between families as related to youth's perceptions of parenting and youth outcomes using a multilevel approach.

Parental work travel

Frequent work-related travel is a unique work demand that has increased substantially in the past few decades (Davidson & Cope, 2003). Work travel is prevalent in a variety of occupations; however, individuals in higher socioeconomic statuses and more men than women experience it frequently (Gustafson, 2006). Work travel is a highly variable experience (especially after the Great Recession beginning in 2007), with travelers often having to adjust to travelling with short notice, cancellations, and little control over their work trips (Swenson & Zvonkovic, 2016). Work travel, as it requires workers to be distant from their families and away for extended periods, may affect the worker and members of the family (Swenson, Zvonkovic, Rojas-McWhinney, & Gerst, 2015; Zvonkovic, Swenson, & Cornwell, 2016). Prior literature has not yet established a consensus of a threshold above which work travel affects individuals or families, but it can be concluded that examining the frequency of being away from home would be important (Casinowsky, 2013; Espino, Sundstrom, Frick, Jacobs, & Peters, 2002; Westman et al., 2009). This study aimed to address this gap by including the context of both mothers' *and* fathers' work–travel frequency.

From a family systems perspective, there is evidence that the work schedule of one family member affects other family members (Han, Miller, & Waldfogel, 2010). Particular arrangements and rearrangements of family roles may occur as families cope with the entry and departure of the family member who travels. There is some evidence that children may have a difficult time distinguishing the time parents are travelling from long work hours (Zvonkovic et al., 2016). Little research has examined how these arrangements and schedule disruptions because of work travel (instead of just long work hours) influence families, especially the relationships between parents and children. The sparse literature on work travel as related to family dynamics suggests that lengthy and frequent travel relates to parents' reports of undesirable changes in children's behavior (Espino et al., 2002). Thus, based on the limited literature, we focused on parents' work travel in terms of the number of travel nights per year.

Mechanisms linking parental work travel to youth adjustment

In the broader work–family literature, there is evidence for an indirect relationship between parental work demands and youth outcomes through the intervening effects of parenting behavior (Bianchi & Milkie, 2010), consistent with work–family spillover (Moen et al., 1983) and crossover (Westman et al., 2009) models. There is also some evidence that other aspects of work, which also characterize work travel (e.g. time spent, nonstandard schedules, stress), negatively influence how workers deal with their roles as parents. For example, parents' long work hours and nonstandard work schedules are related to parents' spending less time with their children (Roeters, Van Der Lippe, & Kluwer, 2010), lower parent–child relationship quality (Roeters et al., 2010), and poor youth adjustment (e.g. high-risk behavior; Han et al., 2010). Even though there is research linking work demands to parenting, it is unclear how parental travel and the effects of extended physical separation influence children's behaviors. Based on the limited literature on parental work travel, we considered the established associations on parental work demands and child adjustment as a strong foundation for understanding how work travel links to parenting and youth behaviors.

Parental knowledge and solicitation

The current study focused on two indicators of parenting related to monitoring, parental knowledge and solicitation, as they may be especially amenable to the effects of parents' work travel and salient and robust protective factors for youth problem behavior (Dishion & McMahon, 1998). Knowledge refers to what parents know about their children's behavior through any source (e.g. spouse, children, police, school; Stattin & Kerr, 2000). Solicitation

(e.g. conversations with children about their daily lives) is a tool that parents use to obtain more knowledge to monitor their children's behavior (Stattin & Kerr, 2000) and may be particularly important for youth who have large blocks of unsupervised time (Laird, Marrero, & Sentse, 2010). When parents travel frequently for work, their knowledge of their children's activities may be reduced and efforts at solicitation may be more difficult (Bumpus, Crouter, & McHale, 1999). This may be because parents spend less time at home or because parents experience work travel as demanding, leading parents to withdraw temporarily from family interactions, resulting in inconsistent or poorer quality parenting. In general, the less parents try to find out or know about their children's behaviors, the more youth tend to exhibit internalizing and externalizing behaviors (e.g. Stattin & Kerr, 2000). Based on the literature, we examined parental knowledge and solicitation as important intervening factors.

Parental and youth gender differences

Travel experiences for men and women remain gendered. Men travel more than women (Gustafson, 2006), yet women experience more stress from work travel, potentially stemming from a lack of time (Kollinger-Santer & Fischlmayr, 2013). This time pressure may result from work and family responsibilities waiting for them after they return from work trips, as mothers in general have been found to be more involved in household and caregiving tasks related to children than fathers (Murry et al., 2013) even when they travel for work (Casinowsky, 2013). Given traditional gendered norms for household and parenting roles, gender differences in work travel may relate to differential effects on family dynamics and adjustment. Research on general aspects of work suggests that in two-parent families where mothers work a high number of hours, fathers know more about their children's lives, whereas mothers' knowledge does not vary by work hours (Crouter, Helms-Erikson, Updegraff, & McHale, 1999). Thus, it may be that when mothers travel frequently, fathers are more involved in their children's lives, but when fathers travel frequently, they are less involved. Alternatively, there is some evidence that mothers with partners who travel for work felt it was important to connect fathers with their children (Zvonkovic et al., 2016). Consistent with this, travelling fathers report spending as much time with children as they can (Zvonkovic et al., 2016), potentially compensating for time away. Youth gender may also explain contextual variation in the links between work travel and youth adjustment. First, there is evidence of differences in prevalence rates for internalizing (higher for girls) and externalizing (higher for boys) problems by youth gender (e.g. Zahn-Waxler, Shirtcliff, & Marceau, 2008). Second, a gender intensification perspective (Galambos, Almeida, & Petersen, 1990) suggests that adolescents may be more receptive

to involvement of the same-gender parent; thus, parent–child relationships between same-gender pairs may relate more strongly to adjustment. There is some evidence to support this perspective in the broader work literature. For example, fathers' nonstandard work hours have been linked with higher levels of externalizing behavior in sons as compared to daughters (Johnson, Li, Kendall, Strazdins, & Jacoby, 2013). To gain important insights into contextual variation in the link between work travel and youth adjustment in two-parent families, this study explored youth gender coupled with traveler's gender.

The current study

The current study was guided by ecological, family systems, work–family spillover and crossover frameworks, and existing empirical evidence. We hypothesized that: (1) parents' work travel nights will negatively relate to youth's perceptions of parental knowledge and solicitation; (2) parents' work travel nights will positively relate to youth externalizing and internalizing behaviors; (3) youth's perceptions of parental knowledge and solicitation will negatively relate to youth externalizing and internalizing behaviors; and (4) youth's perceptions of parental knowledge and solicitation will serve as intervening factors, such that higher levels of parental work travel nights will relate to lower levels of youth's perceptions of parental knowledge and solicitation, which will, in turn, relate to higher levels of youth externalizing and internalizing behaviors. We tested the associations separately for mothers and fathers and explored variation by traveler and youth gender. We controlled for child age (Frick, Christian, & Wootton, 1999) and family income (Conger, Conger, & Martin, 2010), as both are related to parental behavior and youth adjustment.

Method

Participants

The data for this study came from a larger study on the effect of work-related travel on families (PI: Anisa Zvonkovic, NIH RO1 HD047783). Eligibility requirements included families having one adult that: (1) travelled overnight for work and was away from home at least 20 nights per year (chosen as the minimum to ensure frequent work travel, consistent with other studies' thresholds of work travel [e.g. Gustafson, 2006; Westman et al., 2009]), (2) was in the same job for at least one year, and (3) was partnered or married for at least one year. We identified participants by either contacting human resource departments in industries known to have a high proportion of

work travelers (e.g. pharmaceutical sales) or using snowballing techniques in the Southwestern United States. We aimed to have the sample be representative of the distribution of work travelers based on occupation and industry. Potential participants were directed to an online preliminary survey to determine eligibility. We interviewed everyone who completed the online survey, determined to be eligible, and reachable by phone ($N = 100$ families). Study participants included both parents and all children ages 8–18 who resided in the home. Of the 100 families, 44% had children aged 8–18, 26% had children younger than 8 and 30% had no children.

The current study used data from a subsample of the larger study that included 44 two-parent families with a child aged 8–18 ($n = 78$ children), as we were interested in youth perceptions of parenting and their own adjustment. Of the 44 families, 23% had both parents travel for work. Fathers were the only or most frequent traveler in 64% of the families. Fathers who travelled ($n = 31$) were away from home an average of 74.16 ($SD = 67.37$; min/max 3–120) nights per year. Mothers who travelled ($n = 23$) were away on average 52.83 ($SD = 32.75$; min/max 6–280) nights. Typical of families who experience frequent work travel (e.g. Gustafson, 2006), those in this study had a high socioeconomic status, with over 72% of parents having earned at least a bachelor's degree and 36.4% earning a yearly household income of \$120,001 or above (median category = \$110,001–120,000). Mothers were on average 40.39 ($SD = 5.48$) years of age, and fathers were on average 43.11 ($SD = 6.61$). Families had an average of 2.66 children ($SD = 1.01$), with 1.77 ($SD = .94$) children participating in the study. About 80% of children were the oldest child or an only child. The average age of children was 12.13 ($SD = 3.00$) and 51.3% were female. The sample was primarily European American (85.9%).

Procedure

A research team, including one interviewer for each parent and child in the family, interviewed family members individually in their homes using semi-structured interviews. Parent interviews lasted approximately an hour, whereas child interviews lasted about 30 minutes. Consistent with child development recommendations, interviewers established trust and rapport with the family in the home prior to private conversations with children (Gibson, 2012). The child interviewers had extensive experience working with children. They were trained to be vigilant for signs that the child was getting tired or bored with the interview. In these cases, interviewers used breaks to ease fatigue or boredom. We obtained written and verbal consent and assent with both children and parents present. All participants were compensated \$50 each for their participation. The Institutional Review Boards approved all methods.

Measures

Youth adjustment

We conceptualized adjustment as low levels of problem behaviors assessed using the two subscales, externalizing ($\alpha = .81$) and internalizing ($\alpha = .86$) behaviors (summed), from the Youth Self Report (ages 6–18) version of the *Child Behavior Checklist* (Achenbach, 1991). Youth rated on a three-point Likert scale (i.e. 0 = *Not true* to 2 = *Very true or often true*) current delinquent and aggressive behaviors using the externalizing subscale (32 items; e.g. "I try to get a lot of attention"), and withdrawn behavior, somatic complaints, and anxiety/depression using the internalizing subscale (29 items; e.g. "I feel lonely").

Parents' work travel

We operationalized parents' work travel as the number of nights travelled for work per year. We used an in-depth interview technique in which interviewers completed a calendar with participants that detailed their travel in periods of three months to facilitate a discussion. This discussion included the following questions: "In a typical month in the past year, how many nights were you gone overnight due to work?" "Is there a set schedule for your trips over the year, or does it vary? Explain." We chose this method to gather an accurate representation of work travel during the past year as work travel is often highly variable (Espino et al., 2002) and single item measures are unreliable (Loo, 2002). We created the work travel variable by coding these portions of the interview transcript. In particular, trained project staff reviewed the interview transcript and tallied the number of nights parents travelled for work, with questions reviewed by the research team.

Parenting

Youth reported on how much their parents knew about their daily experiences (parental *knowledge*; nine items; e.g. "Does your parent know what you are doing during your free time?"; mothers' $\alpha = .79$, fathers' $\alpha = .85$) and parents' engagement with them in conversation regarding their daily activities, whereabouts, and companions (parental *solicitation*; five items; e.g. "How often does your parent ask you what happened at school on a regular day?") using measures developed by Stattin and Kerr (2000). Reliability for solicitation (mothers' $\alpha = .55$, fathers' $\alpha = .73$) was in the range of other adolescent studies (e.g. $\alpha = .77$; Stattin & Kerr, 2000; $\alpha = .53$ –.69; Keijsers, Branje, VanderValk, & Meeus, 2010). The scales were rated on a 5-point Likert scale (1 = *Almost never* and 5 = *Almost always*) and averaged.

Analytic plan

We used a multilevel modelling (MLM) framework to examine the direct and indirect associations between mothers' and fathers' work travel nights per year (predictor variables), youth's perceptions of mothers' and fathers' knowledge and solicitation (intervening variables), and youth's perceptions of their own externalizing and internalizing behaviors (criterion variables), and variation in these associations by traveler and youth gender (moderator variables; coded as 0 = fathers/sons, 1 = mothers/daughters). We controlled for youth age and family income in all analyses. Individual children were embedded within two-parent families, thus, respondents' data within-family units were more likely to be alike compared to a random sample of individuals from unique families, violating the assumption for independence in ordinary least squares regression analyses. Thus, using MLM, we corrected for the interdependence in the data and examined variation for children within families (i.e. within-family effects) and between families (i.e. between-family effects) (Feaster, Brincks, Robbins, & Szapocznik, 2011). The between-family effects can be interpreted as the average effect of youth's perceptions of parenting on all children in the family. For example, individual children's adjustment in families characterized by high levels of maternal knowledge may differ from those in families characterized by low levels of maternal knowledge. Conversely, the within-family effects can be interpreted as the effect of discrepancies or differences in reporting between individual children in a family. For example, within-family discrepancies in youth's reporting of maternal knowledge may relate to higher or lower levels of problem behaviors among all children.

We used SAS Proc Mixed (9.4) with restricted maximum likelihood estimation to test our research questions in a series of models. To examine the independent effects of mothers' and fathers' travel nights on youth's perceptions of mothers' and fathers' parenting, respectively, and youth's problem behaviors, analyses were conducted separately for mothers and fathers. Analyses were also conducted separately for each intervening (i.e. knowledge, solicitation) and criterion (i.e. externalizing, internalizing) variable. In all analyses, family-level variables (i.e. travel nights, family income) were grand mean centered (i.e. centered on the sample mean) because these variables were shared by all children in the family (no variation within families). The individual-level variables (youth age, youth's perceptions of parenting and problem behavior) were group mean centered (i.e. centered on each family's mean) because each child in the family reported on these variables. The family mean of youth's perceptions of parenting was also included to allow for a test of between-family effects on youth adjustment (Feaster et al., 2011). We calculated the proportion of variance explained (referred to as pseudo R^2) using the individual-level residual variance from the unconditional model

compared to the individual-level residual variance resulting from analyses that included all study variables; interpreted as a squared multiple correlation and used as an effect size.

To estimate the *indirect effects*, each set of analyses included two models (MacKinnon, 2008). *Model 1* estimated the direct effect of travel nights on youth's perceptions of parenting. *Model 2* estimated (1) the direct effect of youth's perceptions of parenting on youth's problem behaviors and (2) the direct effect of travel nights on youth problem behaviors controlling for youth's perceptions of parenting. To test for the significance of the indirect effects, we used the RMediation program to calculate standard errors and 95% confidence intervals (Tofighi & MacKinnon, 2011). To test the *moderating* roles of traveler and youth gender, interaction terms including the moderator of interest and parents' travel nights and youth's perceptions of parenting (e.g. youth gender \times maternal travel nights per year) were included in the analyses. Pertaining to the role of traveler gender, when both parents travelled for work, we used the gender of the parent who travelled the most to capture variation within the family setting related to work travel. The final analyses presented include only significant interaction terms as retaining those that are not significant contributes to an increase in standard errors (Aiken & West, 1991). We conducted follow-up analyses for significant interactions using tests for simple slopes (Aiken & West, 1991). **Table 1** contains correlations and descriptive statistics.

Results

Parents' travel nights linked to youth's perceptions of parenting

The first set of analyses (Model 1) examined the links between work travel nights and youth's perceptions of parenting, as well as variation in these links by traveler and youth gender (**Table 2**). Beginning with maternal knowledge (variance explained, 6%), there was a link with maternal travel nights, indicating that higher numbers of mothers' travel nights related to lower levels of youth's perceptions of maternal knowledge. For maternal solicitation (variance explained, 17%), the link with mothers' travel was moderated by traveler and youth gender. Simple slopes analyses showed that only for families with fathers travelling more than mothers, a higher number of maternal travel nights was associated with lower levels of daughters' ($\gamma = -.02$, $SE = .01$, $p = .01$) perceptions of maternal solicitation. For youth's perceptions of paternal knowledge and solicitation, there were no links with paternal travel nights.

Table 1. Descriptive statistics for study variables (*N* = 78 children in 44 families).

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|-------|------|-------|---------|-------|-------|-------|-------|-------|
| 1. Youth age | – | .09 | .15 | –.22* | .24* | –.26* | .21† | .20† | –.03 |
| 2. Youth gender | –.09 | – | –.15 | .09 | .01 | .16 | .19† | –.05 | .13 |
| 3. Traveler gender ^a | –.15 | –.15 | – | .04 | .63* | .08 | .06 | .07 | .02 |
| 4. Family income | –.22* | .09 | .04 | – | .07 | .36* | .02 | –.27* | –.02 |
| 5. Parents' travel nights per year | –.06 | .01 | –.53* | .25* | – | –.25* | –.07 | .11 | .05 |
| 6. Youth's perceptions, parents' knowledge | –.20† | –.09 | .19† | .17 | –.00 | – | .46* | –.42* | –.14 |
| 7. Youth's perceptions, parents' solicitation | .04 | –.01 | .11 | .21† | .15 | .72* | – | –.13 | –.04 |
| 8. Youth's externalizing | .19† | –.05 | .06 | –.27* | –.11 | –.24* | –.19 | – | .55* |
| 9. Youth's internalizing | –.03 | .13 | .02 | –.02 | .02 | –.10 | –.24* | .55* | – |
| Family variables <i>M</i> | 12.13 | .51 | .67 | 106,923 | | | | 11.58 | 11.82 |
| SD | 3.00 | .50 | .47 | 25,890 | | | | 6.34 | 6.64 |
| Mother variables <i>M</i> | | | | | 26.19 | 4.17 | 3.84 | | |
| SD | | | | | 34.08 | .63 | .40 | | |
| Father variables <i>M</i> | | | | | 55.55 | 3.68 | 3.47 | | |
| SD | | | | | 68.63 | .83 | .91 | | |

Mothers above the diagonal. Fathers below the diagonal. Gender: 0 = sons/fathers, 1 = daughters/mothers.

a. In dual-traveler families, this is the most frequent traveler's gender.

† *p* < .10; * *p* < .05

Table 2. Results of multilevel models (Model 1) predicting youth's perceptions of parenting (*N* = 78 children in 44 families).

| <i>Parameters</i> | <i>Youth's perceptions of knowledge</i> | | | | <i>Youth's perceptions of solicitation</i> | | | |
|--|---|-----------|----------------|-----------|--|-----------|----------------|-----------|
| | <i>Mothers</i> | | <i>Fathers</i> | | <i>Mothers</i> | | <i>Fathers</i> | |
| | γ | <i>SE</i> | γ | <i>SE</i> | γ | <i>SE</i> | γ | <i>SE</i> |
| Intercept | 4.56* | .16 | 3.75* | .23 | 4.10* | .24 | 3.66* | .24 |
| Youth age | –.05‡ | .03 | –.06 | .04 | .09* | .04 | –.04 | .05 |
| Youth gender | –.09 | .11 | .18 | .15 | .02 | .34 | .08 | .18 |
| Traveler gender ^a | –.53* | .22 | –.29 | .29 | –.38 | .30 | –.44 | .31 |
| Family income | .00* | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| Work travel nights per year ^b | –.01* | .00 | .00 | .00 | .00 | .01 | .00 | .00 |
| Youth gender × traveler gender | | | | | .16 | .39 | | |
| Youth gender × travel nights | | | | | –.02* | .01 | | |
| Traveler gender × travel nights | | | | | –.01 | .01 | | |
| Youth gender × traveler gender × travel nights | | | | | .03* | .01 | | |
| Pseudo <i>R</i> ² | .06 | | .04 | | .17 | | .00 | |

Gender: 0 = sons/fathers, 1 = daughters/mothers. Pseudo *R*² is interpreted as a measure of effect size.

a. In dual-traveler families, this is the most frequent traveler's gender.

b. For the parent as indicated in each respective column.

‡ *p* = .05; * *p* < .05

Parents' travel nights, youth's perceptions of parenting, and youth problem behaviors

The second set of models (Model 2) estimated the links between youth's perceptions of parenting and youth problem behaviors, the direct and indirect links between travel nights and youth's problem behaviors, and variation in these links by traveler and youth gender. We discuss the unique results first for externalizing behaviors, then for internalizing behaviors (**Table 3**). Externalizing behaviors (direct and moderated relations) In the model for youth's perceptions of maternal knowledge (variance explained, 13%), traveler gender related to externalizing, such that in families in which mothers travelled most frequently, youth had low levels of externalizing. Youth's perceptions of maternal knowledge (between families) were linked to low levels of externalizing. This association was moderated by traveler gender and revealed that only in families with fathers travelling most frequently, high family levels of youth's perceptions of maternal knowledge were associated with low levels of externalizing ($\gamma = -10.62$, $SE = 2.20$, $p < .001$). There was also a three-way interaction between mothers' travel nights, youth gender, and traveler gender revealed that only in families with fathers travelling most frequently, a high number of maternal travel nights was linked to low levels of daughters' externalizing ($\gamma = -.19$, $SE = .06$, $p = .003$).

Turning to the model for youth's perceptions of maternal solicitation (variance explained, 7%), daughters had lower levels of externalizing than sons. Youth's perceptions of mothers' solicitation (within and between families) related to low levels of externalizing. Traveler gender, and traveler and youth gender, respectively, moderated these associations. Simple slope tests for maternal solicitation (within families) showed that only in families with mothers travelling most frequently ($\gamma = 3.82$, $SE = 1.89$, $p = .055$), high levels of discrepancies among youth's perceptions of maternal solicitation within families were associated with high levels of externalizing. Simple slopes tests for maternal solicitation (between families) revealed that in families with fathers travelling most frequently, high family levels of sons' perceptions of maternal solicitation were associated with low levels of sons' externalizing ($\gamma = -11.30$, $SE = 3.83$, $p = .005$). For families with mothers travelling most frequently, high family levels of daughters' perceptions of maternal solicitation were associated with low levels of daughters' externalizing ($\gamma = -4.26$, $SE = 2.17$, $p = .056$).

Turning to the results for fathers (variance explained in knowledge model: 28%; variance explained in solicitation model: 25%), youth's perceptions of paternal knowledge and solicitation related to low levels of externalizing (between families). Traveler and youth gender moderated these associations. Simple slopes analyses revealed that only for families with fathers travelling most frequently, high family levels of sons' perceptions of paternal

Table 3. Results of multilevel models (Model 2) predicting youths' problem behaviors (N = 78 children in 44 families).

| Parameters | Externalizing behaviors | | | | | | Internalizing behaviors | | | | | | | | | |
|--|-------------------------|--------------|---------|-----------------|--------------|-------|-------------------------|--------------|--------|-----------------|--------------|------|--------|------|--------|--------|
| | Maternal models | | | Paternal models | | | Maternal models | | | Paternal models | | | | | | |
| | Knowledge | Solicitation | SE | Knowledge | Solicitation | SE | Knowledge | Solicitation | SE | Knowledge | Solicitation | SE | | | | |
| Intercept | 57.92* | 1.06 | 57.44* | 15.51 | 45.38* | 7.49 | 47.29* | 9.54 | 23.62* | 7.96 | 22.80* | 5.91 | 17.35* | 4.62 | 21.25* | 4.17 |
| Youth age | .46 | .38 | .29 | .40 | .39 | .34 | .60† | .34 | .10 | .48 | -.16 | .47 | .16 | .48 | .17 | .45 |
| Youth gender | 5.92† | 3.20 | -47.56* | 18.21 | -37.99* | 13.39 | -28.66* | 11.94 | -1.83 | 1.61 | -1.86 | 1.57 | -1.49 | 1.61 | 1.21 | 2.92 |
| Traveler gender ^a | -36.30* | 12.83 | -39.42* | 18.38 | -30.99* | 9.62 | -32.08* | 1.99 | -.75 | 2.31 | -.16 | 2.11 | -.94 | 2.08 | .50 | 2.65 |
| Family income | .00 | .00 | .00* | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| Work travel nights per year ^b | -.03 | .06 | .04 | .03 | .20† | .12 | .29* | .11 | -.01 | .03 | .00 | .03 | .01 | .01 | -.01 | .02 |
| Youth perceptions, parenting (WF) ^c | .35 | 2.45 | -3.70* | 2.95 | .38 | 1.57 | 1.12 | 1.26 | -.13 | 3.09 | 3.08 | 1.91 | .65 | 2.18 | 9.49 | 8.58 |
| Youth perceptions, parenting (BF) ^c | -10.62* | 2.20 | -11.29* | 3.83 | -6.03* | 1.80 | -5.72* | 2.22 | -2.50 | 1.72 | -2.59† | 1.39 | -1.13 | 1.10 | -2.61* | 1.01 |
| Youth gender × traveler gender | -4.52 | 3.68 | 57.72 | 22.14 | 35.29* | 15.57 | 33.16* | 13.75 | | | | | | | | |
| Travel nights × youth gender | -.16* | .07 | | | .06* | .02 | .07* | .02 | | | | | | | | .05# |
| Travel nights × traveler gender | .00 | .08 | | | -.23# | .12 | -.32* | .11 | | | | | | | | .03 |
| Travel nights × youth gender × traveler gender | .21* | .10 | | | | | | | | | | | | | | |
| Perceived parenting (WF) | | | | | | | | | | | | | | | | |
| × youth gender | | | 7.53* | 3.39 | | | | | | | | | | | | -14.95 |
| Perceived parenting (WF) | | | | | | | | | | | | | | | | |
| × traveler gender | | | | | | | | | | | | | | | | |
| Perceived parenting (WF) | | | | | | | | | | | | | | | | |
| × youth gender × traveler gender | | | 11.35* | 4.54 | 10.45* | 3.28 | 9.00* | 3.19 | | | | | | | | |
| Perceived parenting (BF) | | | | | | | | | | | | | | | | |
| × youth gender | | | | | | | | | | | | | | | | |
| Perceived parenting (BF) | | | 7.93* | 2.90 | 9.58* | 4.59 | 5.41* | 2.49 | 4.81† | 2.74 | | | | | | |
| × traveler gender | | | | | | | | | | | | | | | | |
| Perceived parenting (BF) | | | | | | | | | | | | | | | | |
| × youth gender × traveler gender | | | | | | | | | | | | | | | | |
| Pseudo R ² | .13 | | .07 | .28 | .28 | .25 | .25 | .00 | .01 | .00 | .01 | .00 | .00 | .08 | | |

Gender: 0 = fathers/sons, 1 = mothers/daughters. WF = within-family. BF = between-family. Models presented included only significant interaction terms and those needed for higher order interaction terms. Pseudo R² is interpreted as a measure of effect size.

a. In dual-traveler families, this is the most frequent traveler's gender.

b. Work travel variable as indicated in the respective column.

c. Parenting variable as indicated in the respective column.

† $p < .10$; # $p < .05$; * $p < .05$

knowledge ($\gamma = -6.03$, $SE = 1.80$, $p = .002$) and solicitation ($\gamma = -5.72$, $SE = 2.22$, $p = .01$) were linked to low levels of sons' externalizing. Traveler and youth gender also moderated the association between fathers' travel nights and externalizing. Simple slopes analyses for the traveler gender interaction indicated that for families with fathers travelling most frequently, a high number of fathers' travel nights was associated with high levels of externalizing (knowledge model: $\gamma = .20$, $SE = .12$, $p = .09$; solicitation model: $\gamma = .29$, $SE = .11$, $p = .01$). Conversely for families with mothers travelling most frequently, a high number of fathers' travel nights was linked to low levels of externalizing (knowledge: $\gamma = -.04$, $SE = .02$, $p = .05$; solicitation: $\gamma = -.03$, $SE = .02$, $p = .08$). Simple slopes analyses for the youth gender interaction revealed that for daughters (knowledge: $\gamma = .26$, $SE = .12$, $p = .03$; solicitation: $\gamma = .36$, $SE = .11$, $p = .002$), as compared to sons (knowledge: $\gamma = .20$, $SE = .12$, $p = .09$; solicitation: $\gamma = .29$, $SE = .11$, $p = .01$), there was a stronger association between fathers' travel nights and externalizing, such that more travel nights were linked to high levels of externalizing.

Externalizing behaviors (indirect relations)

Turning to the indirect effects, mothers' travel nights were indirectly related to externalizing through youth's perceptions of maternal knowledge. In particular, more maternal travel nights were associated with lower family levels of youth's perceptions of maternal knowledge, which, in turn, were linked to higher levels of externalizing for families with fathers travelling more than mothers ($ab = .11$, $SE = .04$; 95% CI [.043, .195]). There were no other indirect relationships.

Internalizing behaviors (direct, moderated, and indirect relations)

Starting with the maternal solicitation model (variance explained, 1%), youth's perceptions of maternal solicitation (between families) were related to low levels of internalizing (trend level). Turning to the paternal solicitation model (variance explained, 8%), youth's perceptions of paternal solicitation (between families) were linked to low levels of internalizing. There was also a link between youth's perceptions of paternal solicitation (within families) and internalizing that was moderated by traveler and youth gender. Follow-up analyses revealed no significant simple slopes. The link between fathers' travel nights and internalizing was moderated by youth gender. Simple slopes analyses revealed that only for daughters ($\gamma = .04$, $SE = .02$, $p = .04$), a high number of fathers' work trips was associated with high levels of internalizing. There were no indirect relations between parental travel nights and internalizing.

Discussion

This study moves beyond previous investigations on work–family connections by examining the effects of both mothers' *and* fathers' work travel on youth externalizing and internalizing behaviors through youth's perceptions of parenting using a within-family design. First, this study provides evidence for parents' travel nights being associated with youth's externalizing and internalizing behaviors, consistent with findings on work stress, in general, as discussed in a review by Bianchi and Milkie (2010) and with theoretical work by Moen et al. (1983). The findings also provide support for pathways linking work and family with variation by gender, parenting, and youth adjustment domains. Second, as an initial attempt at understanding the links between parents' work travel and youth adjustment, this study employed sophisticated multilevel analytic techniques to examine within- and between-family associations. The work–family literature features few studies that examine mechanisms of spillover of both mothers' *and* fathers' work conditions as related to indicators of multiple children's adjustment.

Parents' work travel nights linked to youth's perceptions of parenting

In partial support of our hypotheses, only mothers' travel nights were associated with the parenting domains of knowledge and solicitation, with variation by domain and gender. In particular, the number of mothers' travel nights in the past year was associated with lower levels of youth's perceptions of maternal knowledge across all families, which is in contrast with literature that has found that regardless of the number of work hours, mothers' maintain their level of knowledge of their children's activities (Crouter et al., 1999). Furthermore, the negative association between mothers' travel nights and youth's perceptions of maternal solicitation held only for particular a family setting based on traveler and youth gender (i.e. daughters in families in which fathers travelled more than mothers). These patterns of results are consistent with research on work demands and parenting behavior suggesting that mothers may have difficulty maintaining all her family responsibilities under highly demanding work conditions (beyond just long work hours), in this case when both herself and her spouse are traveling at high levels. Overall, these findings may reflect that mothers' day-to-day knowledge about their children's lives through the direct oversight of youth's whereabouts and companions may be more difficult to gain when mothers are away from home for more nights, yet mothers' attempts to ask about their children's activities is only affected under certain family conditions. Conversely, for fathers, there were no links between travel nights and youth's perceptions of fathers' knowledge or solicitation. Research has found

that fathers generally have less knowledge of their children's activities than mothers (Crouter et al., 1999); thus, travelling for work may not relate to their solicitation attempts or knowledge of youth's daily activities. Given our relatively small sample, research should replicate these findings. The particular ecology of each family, including gender and role responsibilities, would be fruitful areas to examine.

Parents' work travel nights linked to youth problem behaviors

The results of this study underscore the significance of mothers' and fathers' work travel as important distal settings that relate to youth adjustment. For mothers, we only found links with externalizing behavior, which were consistent with research comparing mothers who work with those who do not, and research accounting for the level of mothers' work demands. This study also connected a specific element of maternal employment (travel nights) to less knowledge of their children's daily behavior and activities (Bumpus et al., 1999; Han et al., 2010). Partially supporting our hypotheses and work-family spillover and crossover mechanisms (Westman et al., 2009), we found that when mothers were away more nights from home, youth reported that mothers had less knowledge of their activities, which, in turn, related to more youth externalizing. This finding was only for families that had fathers who travelled more than mothers; suggesting potential increased risk when both parents travel for work. It is not difficult to imagine this process, such that parents might lose track of where the child is after school when both parents travel for work.

For fathers, the pattern of findings only partially supported our hypotheses, with evidence for travel nights directly, but not indirectly, relating to both externalizing and internalizing behaviors, suggesting a crossover mechanism (Westman et al., 2009). The links between paternal travel nights and youth problem behaviors were powerful enough to appear even when considering the effects of parenting. However, these results may also reflect the need to examine other family dynamics, such as crossover effects to mothers' parenting, as more salient intervening factors related to problem behaviors. The strength of the associations between travel nights and problem behaviors did vary by youth gender (both behaviors) and traveler gender (for externalizing behaviors only). In contrast to gender intensification perspectives suggesting the importance of same-gender parent-youth dyads (Galambos et al., 1990), fathers' travel nights had the strongest associations with daughters' externalizing and internalizing behaviors, with more travel nights relating to more externalizing and internalizing behaviors. In addition to girls being at greater risk for internalizing problems (Zahn-Waxler et al., 2008), these results may reflect that daughters compared to sons are more sensitive to family environment factors (Perry-Jenkins & Gillman, 2000)

and, thus, may pick up on fathers' withdrawal from family life when traveling frequently more so than sons. Alternatively, this pattern of findings may support theoretical notions of differential treatment by fathers (see McHale, Crouter, & Whiteman, 2003 for review), suggesting that fathers may feel more responsibility for parenting sons compared to daughters; thus, under conditions of frequent travel, fathers may withdraw from interactions with daughters more so than with sons. Consistent with this notion, we found that even when fathers were travelling more than mothers, sons' perceptions of high levels of knowledge and solicitation continued to be related to lower levels of externalizing, whereas for daughters there was no evidence suggesting protective effects of fathers' knowledge and solicitation on externalizing in the context of work travel.

When considering the gender of the traveler in the family, the direction of effects between fathers' travel nights and externalizing varied, suggesting the importance of examining both parents' work settings as related to youth adjustment. For families with fathers who travelled more than mothers, more travel related to more externalizing behaviors. Contrary to expectations, in families with mothers who travelled more than fathers, more father travel related to less externalizing behaviors. Consistent with prior research (Crouter et al., 1999), this may reflect fathers' attempts of trying to compensate for both parents being away frequently. As these patterns of findings are novel, more research is needed to understand the complex dynamics occurring within these families. These patterns may highlight variation in traditional gender and familial role expectations or supports that go unfilled during those absences. Future research is needed to disentangle the links between parental work and youth adjustment by examining effects of other family dynamics, such as the interactive or crossover effects of parents' travel on family roles, behaviors, and adjustment. It is also important to hone in on the complexities of parents' work demands for children; the distinction between the times parents are away for work travel versus long work hours may be obscure. Associations may also vary based on the number of trips parents take (i.e. how much they are coming and going from the household as compared to just the quantity of nights away from home). Thus, it is important to examine both families with high work demands (e.g. long hours) who do not travel and families with high work demands who travel to disentangle these links.

Limitations

The study limitations need to be considered when interpreting our findings. First, the sample was small as this study focused on a particular population: parents who travel frequently for work with children between the ages of 8–18 living in two-parent households. Recruitment of this population was

difficult due to variability in travel and family schedules for those who were eligible. Yet, each family contained multiple reporters that allowed us to examine mechanisms linking work and family with the advantage of a within-family design. Second, because the data were self-reported and cross-sectional, we cannot exclude certain alternative explanations for the results. For example, it is also possible that youth's problem behavior is related to levels of parents' solicitation; they may solicit more so with youth who already have higher levels of problem behavior as compared to those youth with lower levels of problem behavior, which could be exacerbated when parents are travelling. However, unlike other family/work data sets, there was no transition to this work demand, and in fact, work travel existed for many families prior to having children. Third, the reliability of youth's reports of maternal solicitation was low. The general effect of low reliability is to attenuate effects (Schmitt, 1996); thus, in this study, the results may reflect a conservative estimate of the associations related to maternal solicitation. Despite limitations, this study took an initial step in examining mechanisms linking the demanding context of work travel to family dynamics and adjustment.

Conclusions

This study provided insights into mechanisms that link both mothers' and fathers' work travel to youth adjustment. Whereas prior research has considered other demanding characteristics of work, our results suggest that mothers' and fathers' travel nights are important in understanding externalizing and internalizing behaviors during middle childhood and adolescence. Applying a within-family design revealed new pathways that link paid work to youth adjustment and provided evidence for intervening processes that may be important targets for clinical intervention. The results of this study highlight the need for clinicians to recognize parental work conditions as associated with developmental threats for children. As work-related travel has increased along with the sped-up pace of living today at work and at home, so has stress (Gustafson, 2006). Attention to parental work stressors and potential for spillover and crossover to individual and family wellbeing are worthwhile areas for clinicians to probe, especially among a population of workers who seem to have many advantages. This research is timely because although work travel is increasing, technological innovations may present other opportunities for parents to monitor their children. Overall, these findings highlight some of the unique challenges families face when parents travel for work.

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