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Associations of Army Fathers' PTSD Symptoms and Child Functioning: Within- and Between-Family Effects

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*This study examined the within-family and between-family associations between fathers' military-related PTSD symptoms and parent ratings of children's behavioral and emotional problems. The sample included married couples (*N = *419) with children composed of a civilian wife and an active-duty husband serving in the U.S. Army. Results indicate that changes in fathers' PTSD symptoms over time were associated with corresponding changes in both mothers' and fathers' reports of child behavioral and emotional problems. These within-family findings were independent from between-family effects, which showed that higher average PTSD symptomatology was associated with more overall behavioral and emotional problems for children. This study uses advances in statistical methodologies to increase knowledge about how PTSD symptoms and child problems are related, both across different families and over time within families.*

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The extensive scope and duration of recent U.S. military operations overseas has increased interest in the effects of military service on children and families (Chartrand & Siegel, 2007). With a particular focus on the "linked lives" of military parents and their children (Cozza & Lerner, 2013), many studies indicate that service members' PTSD symptoms impact their spouses and families (see Galovski & Lyons, 2004). Prior research has shown the association of parents' PTSD with global family functioning (Davidson & Mellor, 2001), parenting processes (Gewirtz, Polusny, DeGarmo, Khaylis, & Erbes, 2010), and the parent–child relationship (Ruscio, Weathers, King, & King, 2002). This study focuses on an important aspect of this topic: the association between military parents' PTSD symptoms and their children's emotional and behavioral adjustment. We aim to extend knowledge about the association of service member PTSD symptoms and children's adjustment by examining both within-family and between-family associations over time.

Research generally shows that the severity of parental PTSD symptoms in a military population is associated with both emotional or internalizing (e.g., depression and withdrawal) and behavioral or externalizing (e.g., aggressiveness and delinquency) problems

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among their children (see Sheppard, Malatras, & Israel, 2010). For example, research indicates that Veterans diagnosed with PTSD reported significantly more behavior problems in their children than Veterans without a diagnosis (Caselli & Motta, 1995; Jordan et al., 1992; Ruscio et al., 2002). Furthermore, in a review article, Dekel and Goldblatt (2008) noted that Veteran parents' PTSD symptoms were consistently associated with poorer child functioning. However, other research has found no such associations (e.g., Davidson & Mellor, 2001). Differentiating within- and between-family associations, as this paper aims to do, may help clarify conflicting findings.

There are several possible reasons why parents' military-related PTSD symptomatology may be related to children's outcomes. Previous literature has identified secondary traumatization as a potential mechanism for the transfer of the impact of traumatic war-time experiences from parents to their families and children (e.g., Davidson, Smith, & Kudler, 1989; Nash & Litz, 2013). Others theorize that parents' PTSD may also be related to more general and basic problems within the family system (see Galovski & Lyons, 2004). For example, PTSD in military parents is associated with disruptions in couple or family functioning, such as decreased marital satisfaction and impaired family communication and problem solving (Allen, Rhoades, Stanley, & Markman, 2010; Davidson & Mellor, 2001; Dekel & Goldblatt, 2008; Gewirtz et al., 2010). In addition, parents with military-related PTSD often employ less effective parenting practices, including decreased sensitivity to their children's needs and over-involvement in their children's lives, reporting less satisfaction with their parenting roles (Zerach, Greene, Ein-Dor, & Solomon, 2012) and lower parenting alliance (Allen et al., 2010). Symptoms of PTSD can also lead to reduced emotional competence in relationships with children because of emotional numbing or disruptions in parental attachment (Cohen, Zerach, & Solomon, 2011; Ruscio et al., 2002). Although this study was not designed to examine such explanations, it may inform these mechanistic theories by shedding light on the co-occurrence of PTSD symptomatology and child behavioral and emotional problems over time.

This foundational research demonstrates that parental PTSD is an important variable in understanding psychological risk to children in military families. Yet the knowledge of how this risk factor relates to children's adjustment is limited by a variety of weaknesses in the extant research. Specifically, one important methodological consideration is whether studies demonstrate that changes in parents' PTSD symptoms correspond to changes in children's psychological adjustment within a family, or whether findings show that parents' PTSD symptom levels are related to the level of children's difficulties between different families. Most research testing for associations between parents' PTSD and children's adjustment shows the latter because of a reliance on group comparisons (e.g., parents with or without PTSD diagnoses; Cohen et al., 2011; Davidson & Mellor, 2001) and cross-sectional analyses (e.g., people with different levels of PTSD symptomatology; Caselli & Motta, 1995; Lester et al., 2010). Longitudinal research is rarer, and, where used, has typically used prospective designs to predict later child adjustment from earlier levels of PTSD (e.g., Gewirtz et al., 2010). While this longitudinal research makes important contributions, the pre-post design restricts the ability to track changes across multiple time points. Thus, the existing body of research yields information based primarily on comparing different individuals or families to one another (i.e., between-family analyses), and does not necessarily provide strong evidence about whether increases (or decreases) in parents' PTSD symptoms might correspond to increases (or decreases) in their children's emotional or behavioral difficulties (i.e., within-family analyses).

This study aims to advance the understanding of the link between parental PTSD and children's wellbeing by investigating within-family changes over time separately from overall differences between different families. When within-family changes are not

statistically separated from between-family differences, the true link between parent and child functioning over time may be confounded with average differences between families (Curran & Bauer, 2011). Thus, teasing apart within-family changes from between-family associations is important because it elucidates whether negative outcomes might be more related to global family risk factors or if they can be better understood by contextual intrafamily changes. Furthermore, within-family associations, which necessitate the use of data across multiple time points, allow us to track the pattern of *co-occurring* change in a way that would not be possible by examining how PTSD symptoms at an earlier timepoint predict subsequent changes in child functioning at a later timepoint. In the case of this study, significant within-family effects would provide stronger evidence of a direct link between changes in father's PTSD symptoms and changes in children's wellbeing than has been established previously. This added knowledge has important clinical implications for targeting intervention strategies. For example, significant within-family effects would provide support for interventions targeting children's wellbeing to focus on reducing parental PTSD symptoms (if present) and changing specific family processes that may vary across time and serve as mechanisms between changes in parental PTSD and changes in child outcomes, such as parenting behaviors. In contrast, significant between-family effects may suggest that interventions should target relatively stable global risk factors that could make families vulnerable to the development of both parents' PTSD and children's emotional and behavioral problems.

This study extends prior research in several important ways. As noted, the analytic strategy separates within-family effects from between-family associations. That is, in addition to examining whether mean levels of fathers' PTSD symptoms were related to child outcomes (between-family effects), we also directly tested whether changes in the PTSD symptomatology of service members were associated with corresponding changes in reported child adjustment (within-family effects). In addition, we used parent reports of child emotional and behavioral symptoms from both fathers and mothers, allowing us to separately evaluate paternal and maternal perceptions of their children's functioning in relation to paternal PTSD symptoms. Some prior studies show effects on child behavior only according to the military parent's ratings, typically the father, and not when child behavior is rated by the civilian parent, usually the mother (Dansby & Marinelli, 1999; Jordan et al., 1992), so a fuller picture of child functioning can be captured by including both parents' ratings. Finally, this study assessed fathers' current PTSD symptoms during active duty. Previous studies have often measured PTSD symptomatology in Veteran samples (e.g., Cohen et al., 2011; Ruscio et al., 2002), and therefore less is known about the link between parent PTSD and child wellbeing among active-duty military families. As this study aims to explore the association between father's PTSD symptoms and child adjustment, it is reasonable to assume this association may differ when fathers are home and likely in more direct contact with their children. Thus, deployment status was included in the analyses as a control variable.

METHOD

Procedures

Participants for this study were a selected subsample of a larger randomized controlled trial testing the impact of a relationship education intervention delivered to couples by U.S. Army chaplains. (For a detailed review of procedures, participants, and the intervention, see Stanley et al., 2014.) In brief, to be eligible for the larger study, couples had to be married, opposite-sex, age 18 or older, and fluent in English, with at least one spouse in active duty with the Army. Couples completed a baseline assessment, and were then

randomly assigned to either the intervention or control (treatment as usual) condition. Following the relationship education interventions, both intervention and control couples completed a postintervention assessment. Approximately every 6 months after the postintervention assessment, each member of couples whose marriage remained intact was given measures that could be completed online, including while deployed. The current analyses are based on data collected at the baseline assessment, postintervention assessment, and at three follow-up assessments (five waves total). The total time span from baseline to the third follow-up assessment was approximately 20 months.

Participants

The sample used in these analyses included 419 couples with children. All couples were composed of civilian wives and Army husbands. At the start of data collection, couples reported having between 1 and 6 children living in their home (M = 2.1, SD = 1.0) with an average children's age of 5.6 years (SD = 4.0). The larger study included 662 couples, but we excluded those who did not have children (n = 130). We also excluded couples in which the wife was in the Army (n = 67) because, while important to understand, such families likely have different dynamics on many dimensions of interest here and we would not have the statistical power to examine such differences effectively. We also excluded couples in which the service member reported that his PTSD symptoms were not at all related to the military (n = 46).

Service members reported being non-Hispanic White (71.5%), Hispanic (12.9%), African American (9.7%), Asian American (1.0%), Hawaiian or Pacific Islander (0.7%), Native American or Alaska Native (0.5%), and Multiracial (3.7%). At the time of the baseline assessment, most service members had a high school diploma (56.7%), with 0.2% not having completed high school, 13.4% having a GED, 17.3% having a technical or associate's degree, 9.2% having a bachelor's degree, and 3.2% having an advanced degree. Average age of service members was 29.9 (SD = 6.02). Similar to husbands, wives reported being non-Hispanic White (72.6%), Hispanic (10.4%), African American (9.0%), Asian American (1.0%), Hawaiian or Pacific Islander (1.0%), Native American or Alaska Native (1.9%), and Multiracial (4.1%). In terms of highest degree of education attained, 45.3% of wives had a high school diploma, 5.1% had not completed high school, 8.3% had a GED, 27.2% had a technical or associate's degree, 10.0% had a bachelor's degree, and 4.1% had an advanced degree. Average age of wives was 29.2 years (SD = 6.01). Fifty-six percent of fathers were deployed at some point during the study—18% at wave three, 36% at wave four, and 2% at wave five.

Measures

PTSD

PTSD symptoms were assessed using the PTSD Checklist (PCL-C; Weathers, Litz, Herman, Huska, & Keane, 1993), which is a 17-item, self-report, Likert-type scale that assesses symptoms of PTSD based on the criteria in the DSM–IV (American Psychiatric Association, 2000). This widely used scale has high internal consistency, test–retest reliability, and convergent and discriminant validity (Pratt, Brief, & Keane, 2006). Each item reflects one of the specific criteria for PTSD, and is answered on a scale ranging from 1 (not at all) to 5 (extremely). This measure evidenced excellent internal consistency in this sample (Cronbach's α = .95; M = 1.95, SD = .89). Active-duty Army fathers reported their own PTSD symptoms on the PCL. After the PCL symptom items, service members were then asked whether these symptoms were related to their military experiences; service members who indicated that these symptoms were not related to their military service were excluded from analyses.

Child behavioral and emotional problems

Child behavioral and emotional problems were assessed using 10 items selected from the internalizing and externalizing scales of the Behavior Problem Index (BPI; Peterson & Zill, 1986), a targeted parent-report measure drawn from the Child Behavior Checklist (Achenbach, 1999). The questions used in this study assess parents' concerns about both internalizing (emotional) and externalizing (behavioral) problems of children between 4 and 18 years of age. Similar to other research focused on parents' global concerns about their children within a family context (Plaisier et al., 2008; Shapiro & Stewart, 2011; Sheppard et al., 2010), this questionnaire asked about all children in a family. Specifically, items were phrased with the introduction, "One or more of our children. . ." followed by target behaviors such as "is disobedient at home" and "seems withdrawn and moody." All items were answered on a Likert scale from 1 (not true) to 3 (always true). This measure has been used in previous research with an overlapping sample (Knopp et al., 2017) and in the current sample evidenced acceptable internal consistency for fathers' report of emotional problems (Cronbach's $\alpha = .79$; $M = 1.25$, $SD = .40$) and behavioral problems (Cronbach's $\alpha = .86$; $M = 1.62$, $SD = .52$), as well as mothers' report of emotional problems (Cronbach's $\alpha = .80$; $M = 1.24$, $SD = .40$) and behavioral problems (Cronbach's $\alpha = .83$; $M = 1.61$, $SD = .49$).

Number and ages of children

Due to the phrasing of the child behavioral and emotional problem questions, parents with more children may have been more likely to report child problems compared to parents of fewer children. Therefore, we included parent reports of the number of children living in the household at each wave of data collection as a control variable. We also included an average of the ages at baseline of all children in each family's household as a control variable.

Data Analytic Plan

To address the primary research question about within- and between-family associations between fathers' PTSD and parent reports of child adjustment, we used three-level multilevel models, with assessments nested within families and families nested within intervention cohorts (for more information about assignment to intervention cohorts, see Stanley et al., 2014). Outcome variables were children's emotional and behavioral problems, rated by both the mother of the child (MOC) and the father of the child (FOC). The primary predictor was fathers' self-reported PTSD symptoms. Within-family effects were modeled at level 1, and between-family effects were modeled at level 2. All models controlled for the number of children in each family's household at each wave of data collection and the average of all children's ages at baseline for each family. We tested four parallel models, which assessed children's emotional and behavioral problems as rated by each parent separately. Model 1 used MOC-rated child behavioral problems, Model 2 used FOC-rated child behavioral problems, Model 3 used MOC-rated child emotional problems, and Model 4 used FOC-rated child emotional problems. We estimated models in HLM7 using full maximum likelihood estimation.

Following guidelines set forth by Curran and Bauer (2011) for disaggregating within- and between-subjects effects, we first tested whether the time-varying covariate, fathers' PTSD symptoms, changed over time. Fathers' PTSD ratings showed a small but significant linear increase over time ($\beta = 0.004$, $p = .002$), indicating that including raw PTSD ratings as a time-varying covariate in the multilevel models would result in biased estimates of within- and between-family effects. Thus, before adding the PTSD scores to the multilevel model, we "detrended" fathers' PTSD ratings by running OLS regression

models predicting fathers' PTSD ratings over time (grand mean centered) for each individual, retaining both the residual PTSD scores and the PTSD intercepts for each individual. The residualized PTSD scores became the level-1 (within-family) predictor in each of the four models, and the individual PTSD intercepts became the level-2 (between-family) predictor. We allowed the level-1 intercept and the slope for time to vary randomly across participants, but preliminary analyses indicated that the random effect for predicting the association between PTSD ratings and parental ratings of child behavioral symptoms was not significant so it was dropped from the model. In addition, none of the parameters varied significantly across cohorts, so all but the first level-3 random effects were dropped from the model.

The models for each report of child outcomes were defined as follows:

$$\text{Level 1: } (\text{CHILD PROBLEMS})_{tij} = \pi_{0ij} + \pi_{1ij}(\text{TIME})_{tij} + \pi_{2ij}(\text{PTSDw})_{tij} + \pi_{3ij}(\text{NUMBER})_{tij} + e_{tij}$$

$$\text{Level 2: } \pi_{0ij} = \beta_{00j} + \beta_{01j}(\text{PTSDb})_{ij} + \beta_{02j}(\text{AGES})_{ij} + r_{0ij}$$
$$\pi_{1ij} = \beta_{10j} + r_{1ij}$$
$$\pi_{2ij} = \beta_{20j}$$
$$\pi_{3ij} = \beta_{30j}$$

$$\text{Level 3: } \beta_{00j} = \gamma_{000} + u_{00j}$$
$$\beta_{01j} = \gamma_{010}$$
$$\beta_{02j} = \gamma_{020}$$
$$\beta_{10j} = \gamma_{100}$$
$$\beta_{20j} = \gamma_{200}$$
$$\beta_{30j} = \gamma_{300}$$

In these models, $(\text{CHILD PROBLEMS})_{tij}$ is the mother or father rating of child behavioral or emotional problems at time t for family i in cohort j; $(\text{TIME})_{tij}$ is the time of the survey response measured in months since the baseline assessment, and grand-mean centered so that effects when time equals 0 are equivalent to the average effects across time; $(\text{PTSDw})_{tij}$ is the detrended (residualized) father's rating of his PTSD symptoms at time t by in family i in cohort j, representing the within-family variance component; and $(\text{PTSDb})_{ij}$ is the OLS intercept of PTSD scores over time (equivalent to the average PTSD score) for the father in family i in cohort j, representing the between-family variance component. At level 1, $(\text{NUMBER})_{tij}$ controls for the reported number of children in the household at each eave, and at level 2, $(\text{AGES})_{ij}$ controls for the average of the ages of all children in each family. Because mothers and fathers could complete their surveys at different times, when the outcome was mother-rated, we used the time of the mother's survey response, and when the outcome was father-rated, we used the time of the father's survey response.

In terms of the fixed effects estimated, γ_{000} represents the overall average level of parent ratings of child problems, and γ_{100} is the overall average rate of change in parent ratings of child problems over time. The coefficient γ_{010} represents the test of the between-family effect of fathers' average PTSD levels on average parent ratings of child problems; and γ_{200} represents the within-family association between changes in fathers' PTSD and changes in parent ratings of child problems over time.

Deployment status

Because of the military nature of the sample and interest in the possible impact of deployment on the relationship between PTSD symptoms and child adjustment, we also tested whether including fathers' current deployment status impacted the results. We used an indicator of current deployment at every assessment first to control for deployment status at each wave of data collection, and then to test whether deployment status moderated the association between fathers' PTSD and each parent's reports of child problems by adding the interaction between deployment status and PTSD symptoms at each wave to the level 1 equation in each of the four multilevel models.

RESULTS

Fixed-effects estimates for each multilevel model are shown in Table 1. Across families, parent ratings of child emotional problems increased significantly over time, by both parents' reports (γ_{100} in Models 2 and 4), whereas parent ratings of child behavioral problems did not (γ_{100} in Models 1 and 3). Means and standard deviations of the PTSD scores and child behaviors across time points are shown in Table 2.

The between-family effect of fathers' average PTSD ratings (γ_{010}) was significant for both mothers' and fathers' reports of their children's behavioral problems. However, the association between father's average PTSD ratings was significant only for fathers' reports of their children's emotional problems. Fathers who had higher average PTSD symptom ratings rated the level of their children's behavioral and emotional problems higher, but this effect was only observed for mothers' ratings of child behavior problems. In contrast, the within-family effect of changes in fathers' PTSD ratings (γ_{200}) was significant for mothers' and fathers' ratings of both behavioral and emotional problems among their children. That is, as fathers' PTSD symptoms increased from assessment to assessment, both mothers and fathers reported corresponding increases in child behavioral and emotional problems over the same time frame.

Deployment Status

Controlling for deployment status did not change the significance of any results, with the exception of the within-family effect of fathers' PTSD on mothers' ratings of child behavioral problems, which dropped to a trend when controlling for deployment status (in Model 3, $\gamma_{200} = 0.036$, $p = .08$). While the p-value changed, the coefficient itself was equivalent, suggesting that the only real change from that analysis was in the power to detect the effect. The interaction between fathers' deployment status and PTSD ratings was nonsignificant for all outcomes, indicating that fathers' reports of their PTSD symptoms were similarly related to both mothers' and fathers' ratings of child adjustment regardless of whether fathers were deployed.

DISCUSSION

This study provides support for the link between PTSD symptomatology among Army fathers and parents' ratings of their children's emotional and behavioral wellbeing. These findings complement prior evidence that severity of parents' PTSD symptoms is associated with overall child wellbeing (Caselli & Motta, 1995). Most importantly, this study also extends prior between-family research designs by demonstrating that within-family changes in fathers' PTSD symptoms correspond to concomitant changes in parents' ratings of child emotional and behavioral symptoms over time. In other words, this study documents not only that children of fathers with greater levels of PTSD symptomatology

Table 1
Multilevel Model Fixed Effects

	Model 1: MOC-rated behavioral				Model 2: FOC-rated behavioral				Model 3: MOC-rated emotional				Model 4: FOC-rated emotional			
Fixed effect	**Coefficient**	***SE***	***df***	***r***	**Coefficient**	***SE***	***df***	***r***	**Coefficient**	***SE***	***df***	***r***	**Coefficient**	***SE***	***df***	***r***
Intercept (γ_{000})	1.601***	0.019	51		1.612***	0.022	51		1.236***	0.017	51		1.249***	0.015	51	
PTSDb (γ_{010})	0.068**	0.025	328	.07	0.132***	0.027	330	.14	0.022	0.036^	328	.08	0.096***	0.018	330	.16
Age (γ_{020})	0.015**	0.005	328		0.010	0.006	330		0.020***	0.004	328		0.021***	0.004	330	
Time (γ_{100})	−0.000	0.001	328		−0.001	0.001	330		0.003***	0.001	328		0.005***	0.001	330	
PTSDw (γ_{200})	0.043*	0.020	819	.08	0.102***	0.020	831	.21	0.045*	0.017	818	.09	0.055**	0.019	831	.13
Number (γ_{300})	0.141***	0.019	819		0.154***	0.020	831		0.064***	0.016	818		0.070***	0.014	831	

Notes. FOC = Father of Child; MOC = Mother of Child; $r = \sqrt{[t2/(t2 + df)]}$.
^$p < .10$.
*$p < .05$.
**$p < .01$.
***$p < .001$.

TABLE 2

Means and Standard Deviations of PTSD Scores and Child Behaviors Across Timepoints

	Baseline		Post assessment		Follow-up 1		Follow-up 2		Follow-up 3	
Measure	***M***	***SD***	***M***	***SD***	***M***	***SD***	***M***	***SD***	***M***	***SD***
Behavior problems										
MOC-rated	1.621	.489	1.590	.492	1.590	.477	1.649	.498	1.632	.493
FOC-rated	1.625	.524	1.598	.507	1.608	.514	1.632	.523	1.648	.531
Emotional problems										
MOC-rated	1.202	.368	1.223	.372	1.241	.408	1.291	.441	1.280	.427
FOC-rated	1.218	.386	1.204	.336	1.226	.373	1.32	.451	1.310	.454
PTSD	1.994	.863	1.903	.838	1.962	.886	1.966	.918	1.950	.968

Note. FOC = Father of Child; *M* = mean; MOC = Mother of Child; *SD* = standard deviation.

are perceived to have more difficulties, but also that changes in PTSD symptoms over time are associated with linked changes in both mothers' and fathers' perceptions of their children's functioning. Although the effect sizes were small, suggesting that changes in parent PTSD symptoms do not fully explain related changes in child wellbeing, these results strengthen the evidence documenting a dynamic link between the two variables.

The co-occurrence of PTSD symptomatology and child behavioral and emotional problems may be explained by several mechanistic pathways linking these two variables. For example, when parents with PTSD are experiencing an increase in symptoms levels, they may be especially likely to exhibit poorer parenting practices which contributes to coinciding increases in child emotional and behavioral symptoms. Conversely, it could be the case that increases in child emotional and behavioral problems create a hostile home environment, exacerbating PTSD symptoms such as avoidance and emotional numbing. It may also be the case that situational stressors external to the family might spark increases in both variables.

While this study does not explain precisely why changes in military fathers' PTSD symptoms are associated with changes in parents' ratings of their children's wellbeing, these findings have important implications for intervention. Specifically, these results provide theoretical support for interventions that aim to improve family functioning by targeting PTSD symptoms. A within-family link suggests that ameliorating PTSD symptoms among military fathers may prompt corresponding positive changes in the trajectories of their children's emotional and behavioral adjustment. Future research exploring this directional hypothesis would add support to a causal inference about the link between these variables. This contribution is particularly important given the reliance in prior research on between-family comparisons, which demonstrate differential risk between different families but provide weaker evidence that changes in PTSD symptoms within families may lead to improvements in child wellbeing. Our within-family analyses provide more direct evidence for linked changes between fathers' PTSD symptoms and children's adjustment.

The between-family findings were also significant for both civilian mothers' and military fathers' reports. Because PTSD symptoms were always reported by fathers, significant associations with mothers' reports of children's functioning suggest that the link between fathers' PTSD and children's wellbeing is not simply due to a general reporting bias related to having active symptoms of PTSD. Instead, our results show that both mothers and fathers perceived changes in their children's emotional and behavioral functioning that were related to changes in fathers' PTSD symptoms and that were unique from the relationship between overall PTSD levels and the average level of children's difficulties also observed.

Deployment status did not moderate the link between PTSD and parents' ratings of child functioning. Specifically, fathers' self-reported PTSD symptomatology was generally associated with both parents' ratings of child functioning regardless of whether fathers were at home with the family or deployed when they or their wives completed measures, suggesting that changes in fathers' behaviors or moods may impact parents' ratings of child behaviors even while fathers are deployed. The link between PTSD and parent ratings of child adjustment may be sustained during deployment through direct communication between the father and his children, or via alternative pathways such as marital conflict or mothers' wellbeing. For example, increasing PTSD during deployment may be a marker for increasing trauma exposure for the father at that time, and this risk could cascade to increased stress for family members back home. It is also possible that a father's PTSD symptoms may have less of a day-to-day impact on his family when he is deployed, but that deployment adds its own stress to the family and could account for some of the association between PTSD and child adjustment.

Although this study makes an important contribution toward understanding how parents' PTSD is associated with children's wellbeing among military families, this study also has some important limitations. The within-family results are a novel and important next step in this area of research. However, they do not provide evidence that fathers' PTSD symptoms actually cause child difficulties, nor mechanisms that might account for effects. Further research using experimental designs or clinical trials is needed to investigate the causal link between parent and child functioning. Such additional research would inform both the potential for intervention and theories about the process by which parent psychopathology impacts children.

In terms of measurement limitations, we only had access to parents' reports of their children's wellbeing. Future studies could include more objective and comprehensive measures of child functioning, such as observational measurements by teachers or peers, which are not available for this sample. Second, as we focused on families with fathers in the military, we do not know if similar patterns exist for families where mothers are service members. Third, this study used a sample of married opposite-sex participants from two Army posts within the United States, and may not generalize to other populations, including nonmilitary families, families in other countries, or families with unmarried or same-sex parents.

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