

# Children on the Homefront: The Experience of Children From Military Families



**WHAT'S KNOWN ON THIS SUBJECT:** Deployment is a period of transition and potential stress for military families; however, there is limited understanding of the experience of children from military families. In addition, there is little information with respect to their overall well-being.



**WHAT THIS STUDY ADDS:** We examined how children from military families manage across social, emotional, and academic domains. In addition, we uniquely examine these issues through the lens of both the child and caregiver.

## abstract

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**OBJECTIVE:** Although studies have begun to explore the impact of the current wars on child well-being, none have examined how children are doing across social, emotional, and academic domains. In this study, we describe the health and well-being of children from military families from the perspectives of the child and nondeployed parent. We also assessed the experience of deployment for children and how it varies according to deployment length and military service component.

**PARTICIPANTS AND METHODS.** Data from a computer-assisted telephone interview with military children, aged 11 to 17 years, and nondeployed caregivers ( $n = 1507$ ) were used to assess child well-being and difficulties with deployment. Multivariate regression analyses assessed the association between family characteristics, deployment histories, and child outcomes.

**RESULTS:** After controlling for family and service-member characteristics, children in this study had more emotional difficulties compared with national samples. Older youth and girls of all ages reported significantly more school-, family-, and peer-related difficulties with parental deployment ( $P < .01$ ). Length of parental deployment and poorer nondeployed caregiver mental health were significantly associated with a greater number of challenges for children both during deployment and deployed-parent reintegration ( $P < .01$ ). Family characteristics (eg, living in rented housing) were also associated with difficulties with deployment.

**CONCLUSIONS:** Families that experienced more total months of parental deployment may benefit from targeted support to deal with stressors that emerge over time. Also, families in which caregivers experience poorer mental health may benefit from programs that support the caregiver and child. *Pediatrics* 2010;125:16–25

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### KEY WORDS

military youth, deployment, emotional health

### ABBREVIATIONS

HCG—home caregiver

SDQ—Strengths and Difficulties Questionnaire

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Multiple and extended deployments and the high operational pace of the current conflicts are unparalleled for the US military's all-volunteer force.<sup>1</sup> As a result, many youth from military families have been experiencing significant parental absence. In 2006, ~1.89 million US children had at least 1 parent in the military; 1.17 million had parents in the active-duty component, and 713 000 had parents in the reserve component (National Guard or Reserve).<sup>2</sup> What is the experience of parental deployment and absence for youth from military families?

Although the link between stress and academic, social/emotional, and behavioral challenges has been well established,<sup>3–5</sup> there is relatively little information on whether stress associated with parental deployment is related to similar difficulties.<sup>6–9</sup> Research during previous wars suggested an association between parent separation during deployment and youth behavioral problems.<sup>6,10–12</sup> Recently, studies have focused more directly on the mental health and well-being of children of currently deployed service members and have shown similar difficulties<sup>13–17</sup> such as problems sleeping, higher stress and anxiety, and declining grades, as well as parent-child problems, including increases in child maltreatment.<sup>18,19</sup>

Given the number of military children who experience more months or years of parental deployment, it is increasingly important to understand their health and well-being and to determine if the total time of parental deployment affects child academic, social, and family functioning. Despite the contribution of previous studies, significant gaps remain. To our knowledge, no studies have assembled the breadth of information about military children necessary to allow comparison with other youth populations. In addition, no studies have quantita-

tively assessed the experiences and perspectives of youth directly along with caregiver perspectives, and no studies have quantitatively assessed deployment and reintegration challenges and linked results to demographic, military, and deployment characteristics.

In this study, we address these gaps via 2 research aims. First, we describe the health and well-being of children from military families from the perspectives of the child and nondeployed parent. Second, we assess the experience of deployment for children and how it varies according to total months of deployment and military service component.

## PARTICIPANTS AND METHODS

### Study Design and Sample

Families were selected from the National Military Family Association 2008 Operation Purple applicant pool. Operation Purple is a free camp sponsored by the association for children of military service members at 63 sites nationwide. Children between 7 and 17 years of age can attend the camp, including multiple children from the same family. The mission of Operation Purple is to help children cope with the stress of war, particularly those who have experienced a deployment. Approximately 12 500 children applied to attend the camp, and 9138 children with and without deployment experience were selected.

Of the applicant pool, 4674 families with children between 11 and 17 years of age were eligible for the study. A single child from families with more than 1 child in the study age group was randomly selected to participate in the study. This resulted in a pool of 4170, all of whom were sent a letter that explained the next steps and gave them the opportunity to opt out. Telephone calls were then made to landline telephone numbers listed on the camp ap-

plications by Abt-SRBI, a survey house contracted to conduct the interviews. Because of cell phone marketing restrictions, families who listed only cell phones were included if they contacted Abt-SRBI via the toll-free number provided in the prenotification letter, if caregivers contacted the project principal investigators, or if Abt-SRBI was able to locate them via publicly available landline numbers using a telephone number search service. On the basis of these criteria, we determined that 3165 families were eligible to participate.

Families were contacted between June 2008 and August 2008 in "batches" on the basis of the child's camp start date. The sampling plan was designed to be proportionate to deployed-force composition across Army, Navy, Marines, and Air Force active and Guard/Reserve service members (Table 1).<sup>1</sup> Abt-SRBI called families and spoke with the selected child's primary caregiver, or home caregiver (HCG). Primary caregiver is defined as the caretaker responsible for the child at present or when the deployed parent is away. Contact was made with 1697 families (53.6% of the viable sample). Of those, 89% of the households were screened and agreed to participate ( $N = 1507$ ). Of the 3165 viable sample, 196 opted out, and 1272 did not have a valid telephone number and were not called or were never reached.

Assessors used computer-assisted telephone interviewing with 1 child (11–17 years old) and the HCG. A complete HCG-and-child interview took ~1 hour. The general sequence was to screen the HCG to describe the study, secure consent and permission to interview the child, and the HCG interview. This was followed by child assent and the child interview. Each survey took ~30 minutes, with the child interview taking closer to 20 minutes. Break-offs were allowed, so some in-

**TABLE 1** National Deployment (2007 Data) and Study Population Composition Comparison

Branch	Deployment Composition, %	Study Population, %
Army, active	30	32
Army Reserve/Guard	19	25
Navy, active	17	14
Navy Reserve/Guard	2	3
Marines, active	11	5
Marines Reserve/Guard	2	1
Air Force, active	14	11
Air Force Reserve/Guard	6	9
Total	100 <sup>a</sup>	100

<sup>a</sup> Percentages do not total 100 because of rounding.

interviews were completed with more than 1 call.

### Measures and Data Collection

We conducted 2 interviews, 1 with the HCG and 1 with the child. Interviews covered service-member deployment history, children's difficulties with the deployment and reintegration/return of the service member, and child and maternal well-being. The HCG and child interview drew largely on existing measures and covered similar topic areas to allow for comparisons between the 2 reporters. In addition, each survey included unique questions (see Table 2 for a list of measures and psychometrics). The study was approved by the Rand Human Subjects Protection Committee.

### Data Analysis

Our analysis proceeded in 2 steps. First, to identify important covariates, we examined bivariate associations between each child well-being outcome and each covariate, testing for associations at  $P < .05$ . Significant covariates included child age, gender, and race/ethnicity; caregiver mental health; and deployment characteristics (see Table 3 for list of covariates), and these were included in the multiple regression models. On the basis of sample size, we combined families in the National Guard and Reserve for comparisons with those in the active component (analytic sample size:  $n = 1495$ ). Because of their small sample

size, Coast Guard families were included in the descriptive statistics but removed from subsequent analyses. Second, we fitted linear regression models for our outcomes of interest by using the ordinary least-square method for cross-sectional data in SAS 9.1.3 (2002–2004).<sup>20</sup> These multiple linear regressions included key covariates, such as child, HCG, service member, and family demographic characteristics, as well as deployment-related histories (eg, months deployed in the last 3 years). To reduce the estimation bias, we also included a measure of the HCG well-being and children's emotional difficulties on the basis of the Strengths and Difficulties Questionnaire (SDQ) as covariates in the regression models. Table 4 provides the regression analyses of child well-being outcomes, and Table 5 provides these analyses for deployment and reintegration challenges. Table 5 is based on the 1328 families that experienced at least 1 deployment in the past 3 years, who provided complete deployment history.

Our study simultaneously examined many associations in various outcomes. Statistical significance was assessed by using the Bonferroni  $P$ -value adjustment to avoid excessive false-significant findings in the presence of multiple testing. The Bonferroni adjustment controls the familywise error rate at the nominal level of .10, which

limits false finding in all significant associations based on adjusted  $P$  values.

## RESULTS

### Sample Characteristics

The sample was predominantly white, non-Hispanic (72%). Nearly half of the children were girls (47%; Table 3). The average age of the children was  $\sim 13$  (SD: 1.5) years. Most of the caregivers were women (95%), with an average age of 38 (SD: 6.0) years. Most caregivers were employed outside the home (58%) and had some college education (86%).

Approximately 57% of the families had a parent in the Army, and nearly 20% had a parent in the Air Force. Although participants were sampled to match national deployment numbers, the baseline sample had fewer Marines, primarily because of the availability of families in the applicant pool from which the sample was drawn (6% vs 13% nationally; Table 1). Approximately 37% of the families were in the National Guard or Reserve. The majority of the families were in the midgrade or senior enlisted rank or pay grade (67%). Most of the families had experienced at least 1 deployment (95%), and, on average, families reported that the parent was deployed  $\sim 11$  (SD: 8.9) months in the previous 3 years (36 months). At the time of the baseline interview, approximately one third (38%) of the families were experiencing a deployment.

### Child Well-being

A goal of this analysis was to show how children from military families function with respect to academics, peer and family relations, general emotional difficulties, and overall problem behaviors. Table 4 summarizes the average scores on these measures as well as the relationships between family, military, and deployment factors and these outcomes. The average

**TABLE 2** Description of Study Constructs and Domains

Construct/Domain	Respondent	Measure, Citation, and Modifications	Psychometrics, Range (Cronbach's $\alpha$ )
Child and maternal well-being			
Academic engagement	Child	Academic engagement <sup>32</sup> was determined by using a 6-item scale that asks children about being late to school, being ready for class, and other related items. The tool is based on a 5-point scale, ranging from "none of the time" to "all of the time."	0–24 (0.83); a higher number indicated more difficulties
Anxiety	Child	SCARED short form. <sup>25</sup> The short form is a 5-item measure that assesses children's anxiety.	0–10 (0.84); a higher number indicated more difficulties
Behavior problems	Child	Problem Behavior Frequency Scale (PBFS). <sup>24,33</sup> The PBFS assesses children's problem behaviors in the previous 6 mo and is scored based on the number of times the behavior is reported, from "never" to "20 or more times." Children 11–14 y were not asked about substance use and use of a weapon to hurt others. Used modifications made by the Teen Depression Awareness Study. <sup>32</sup>	0–79 (0.84); a higher number indicated more difficulties
Total emotional difficulties	HCG, child	The SDQ. <sup>21</sup> The SDQ is a brief behavioral screening questionnaire made up of 25 items among 5 scales of 5 items each, generalizing scores for conduct problems, hyperactivity, emotional symptoms, peer problems, and prosocial behavior; all but the last scale are summed to generate a total difficulties score.	0–40 (0.83)
Peer functioning	HCG	Items are based on the Pediatrics Quality of Life Inventory (PedsQL) <sup>34</sup> Parent Report for Teens 4.0. The adapted scale was created by the Teen Depression Awareness Project (TDAP). <sup>25</sup> TDAP dropped 2 items from the PedsQL social subscale and modified the response set from "never . . . always" to "none of the time . . . all of the time" to be consistent with other survey scales. The stem was also modified accordingly to ask how "often" instead of how "much" things were a problem. The new 3-item scale assessed children's ability to interact with other youth and had good internal consistency.	0–12 (0.83)
Family functioning	HCG	A 4-item scale created for the TDAP was used to assess children's ability to get along in the family. The 4 items were modeled after PedsQL.	0–16 (0.83)
Maternal mental health	HCG	Mental Health Inventory (MHI-5) <sup>35</sup> is a well-validated and reliable measure of mental health. The MHI-5 is scored using a 5-point scale from "all of the time" to "none of the time."	0–20 (0.83)
Deployment-related experiences			
Child difficulties with deployment (during deployment)	HCG, child	New scale was created by using confirmatory factor analysis that treated individual items categorically. Many of these deployment-experience items were developed as a result of a pilot analysis of Operation Purple participants. <sup>31</sup> The measures were reviewed by military family researchers and NMFA program leaders for face and content validity. The HCG and child scales asked about difficulties the child experienced during deployment (eg, "dealing with life without his/her deployed parent"). The HCG scale is made up of 10 items. The child scale includes 9 items. Both scales are dichotomized (yes/no).	HCG scale: 0–10 (0.83); child scale: 0–9 (0.83)
Child difficulties with reintegration (post-deployment)	HCG, child	As indicated above, new scales were created for this study. The HCG and child scales asked questions about difficulties with reintegration (after the deployed parent returned), such as "getting to know his/her deployed parent again." Both scales were made up of 6 items, with responses dichotomized (yes/no).	HCG scale: 0–6 (0.83); child scale: 0–6 (0.84)

NMFA indicates National Military Family Association. A higher number indicated more difficulties/problems for all scales.

score of emotional difficulties (SDQ) as reported by caregivers was 9.8 (SD: 6.6), on a scale of 0 to 40 (Table 2) and by children was 11.5 (SD: 6.1). Figure 1 summarizes the comparison of this sample with a national sample of caregivers who reported on child emotional difficulties, stratified according to age and gender.<sup>21</sup> Compared with

children in the US sample, the mean SDQ score of our study sample was consistently larger in each age according to gender group. On the basis of the Welch's 2-sample *t* test, all differences were highly significant. For example, the average SDQ score for girls aged 11 to 14 years was 6.6 in the national sample compared

with 8.8 in our study sample. The difference is  $-2.2$  and statistically significant ( $P < .0001$ ).

On the basis of scoring using the Screen for Child Anxiety Related Emotional Disorders (SCARED) short scale, 30% of the sample had some anxiety ( $\geq 3$  on a scale of 0–10), indicating a

**TABLE 3** Sample Descriptive Statistics (*N* = 1507)

Variable	Mean (SD) or %
<b>Military characteristic</b>	
Service	
Army	57.1
Navy	16.8
Air Force	19.8
Marines	5.5
Coast Guard	0.9
Component	
Active	62.9
Reserve	22.3
National Guard	14.8
Pay grade	
E1–E4 (lower enlisted)	6
E5–E6 (midgrade enlisted)	36.3
E7–E9 (senior enlisted)	30.2
Officer	27.5
<b>Child and caregiver characteristics</b>	
Child age	12.8 (1.5)
Child gender, % female	46.6
Child race/ethnicity	
Asian/Pacific Islander	1.3
Black/African American	11.2
Hispanic/Latino	5.3
White/Caucasian	72.4
Other/multiracial	9.7
Caregiver age	38.4 (6.0)
Caregiver gender, % female	94.5
Housing	
Living in military housing	23.2
Owning home	64.6
Renting home	12.2
Caregiver employed (outside home)	58
Operation Purple camp acceptance, % accepted	85.1
Caregiver mental health status (scale 0–20, higher indicates worse)	5.4 (3.4)
Caregiver education, % with some college or more	85.6
<b>Deployment experience</b>	
Current deployment, % yes	38.3
No. of deployments in last 3 y	
0	5.2
1	38.6
2	29.1
≥3	27.1
Months deployed in the last 3 y	10.9 (8.9)

need for additional evaluation for a possible anxiety disorder. This is somewhat higher than that from other samples of youth. For example, ~9% to 15% of 7- to 11-years-olds met the criteria for an anxiety disorder in a primary care setting.<sup>22</sup>

In regression analyses adjusting for demographic and deployment factors, there were age and gender differences in child well-being, which mostly mirrored trends found in other studies.<sup>23,24</sup> Difficulties with academic en-

gagement ( $\beta = .36; P < .01$ ) and problem behaviors such as fighting or drinking ( $\beta = .87; P < .01$ ) were worse with increasing age. On the other hand, peer functioning (as reported by the HCG) was better with increasing age ( $\beta = -.16; P < .01$ ). Symptoms of anxiety decreased with increasing age ( $\beta = -.15; P < .01$ ). Compared with a nondepressed clinical sample, participants in this study had comparable difficulties in peer functioning but slightly greater difficulties in family functioning (mean: 3.3

[SD: 0.4] in the clinical sample versus 4.3 [SD: 3.2] in the study sample).<sup>25</sup>

Caregiver mental health was significantly associated with child well-being, particularly child academic engagement (as reported by the child), emotional difficulties, and peer and family functioning (all  $P < .01$ ). There were no major differences in child well-being according to component, deployment experience, and service (not presented).

### Child Difficulties During Deployment and Reintegration

Children and caregivers were asked to report on difficulties that children experienced as a result of parental deployment and return. Table 5 summarizes findings from multivariate analyses that explored the relationship between family, military, and deployment characteristics and the experiences of these difficulties. The following are the results based on HCG and child reports, respectively.

#### Difficulties During Deployment

There were notable differences in deployment experience according to gender, child age, housing status, caregiver mental health, caregiver report of child emotional difficulties, and the number of months deployed in the previous 3 years.

Caregivers reported that older children had a greater number of difficulties during deployment ( $\beta = .12; P < .01$ ). Girls reported more challenges during deployment ( $\beta = .35; P < .01$ ), but this difference was not statistically significant according to caregiver report (model 1). As reported by the HCG, those who lived in military housing ( $\beta = -.55; P < .01$ ) at the time of the interview reported that their children had fewer difficulties during deployment than families that reported renting at the time of the interview.

Caregivers with poorer mental health reported more child difficulties during

**TABLE 4** Associations Between Child and Military Characteristics and Child Well-being Problems, as Reported by Child and Parent/Caregiver ( $n = 1495$ )

Variable	Child Reported				Caregiver Reported		
	Academic Engagement Problems	Anxiety	Problem Behaviors	Emotional Difficulties	Emotional Difficulties	Peer Functioning Problems	Family Functioning Problems
<i>Overall (mean, SD)</i>	4.8 (3.3)	1.9 (1.8)	5.6 (7.9)	11.5 (6.1)	9.8 (6.6)	1.8 (2.4)	4.3 (3.2)
<i>Military characteristics</i>							
	$\beta$ coefficients (SE)						
Active component (vs. Guard/Reserve)	-0.21 (0.24)	0.09 (0.13)	0.36 (0.53)	0.36 (0.44)	-0.38 (0.46)	-0.12 (0.17)	-0.40 (0.20)
E5-E6 (mid grade enlisted) (vs. E1-E4)	-0.76 (0.46)	-0.01 (0.20)	-1.96 (1.31)	-0.98 (0.71)	-1.28 (0.79)	-0.68 (0.38)	-0.73 (0.35)
E7-E9 (senior enlisted) (vs. E1-E4)	-0.66 (0.47)	-0.11 (0.21)	-2.10 (1.30)	-1.46 (0.74)	-1.89 (0.81)	-0.73 (0.39)	-0.79 (0.36)
Officer (vs. E1-E4)	-0.08 (0.26)	-0.21 (0.22)	-1.43 (1.32)	-1.67 (0.77)	-2.49 (0.82) <sup>a</sup>	-0.85 (0.40)	-0.77 (0.36)
<i>Child and caregiver characteristics</i>							
	$\beta$ coefficients (SE)						
Child age (years)	0.36 (0.06) <sup>a</sup>	-0.15 (0.03) <sup>a</sup>	0.87 (0.15) <sup>a</sup>	-0.20 (0.12)	-0.14 (0.12)	-0.16 (0.04) <sup>a</sup>	0.06 (0.05)
Female gender (child)	-0.84 (0.19) <sup>a</sup>	0.57 (0.11) <sup>a</sup>	-1.83 (0.46) <sup>a</sup>	-0.33 (0.36)	-1.96 (0.36) <sup>a</sup>	-0.40 (0.13) <sup>a</sup>	-0.52 (0.16) <sup>a</sup>
Living in military housing (vs. rent)	-0.41 (0.36)	0.23 (0.20)	-0.53 (0.89)	-0.96 (0.64)	-0.69 (0.63)	-0.39 (0.23)	-0.19 (0.30)
Owning home (vs. rent)	-0.45 (0.33)	-0.02 (0.17)	-1.10 (0.85)	-0.48 (0.56)	-0.10 (0.56)	-0.23 (0.21)	-0.13 (0.26)
Caregiver employed	-0.07 (0.21)	-0.02 (0.12)	0.34 (0.51)	-0.23 (0.38)	-0.66 (0.39)	-0.22 (0.14)	-0.20 (0.18)
Caregiver report of poor mental health	0.11 (0.03) <sup>a</sup>	0.05 (0.02) <sup>a</sup>	0.14 (0.07)	0.20 (0.05) <sup>a</sup>	0.77 (0.06) <sup>a</sup>	0.19 (0.02) <sup>a</sup>	0.33 (0.03) <sup>a</sup>
<i>Deployment experience</i>							
	$\beta$ coefficients (SE)						
Currently deployed	-0.08 (0.26)	-0.23 (0.15)	-0.78 (0.58)	-0.26 (0.47)	-0.25 (0.47)	-0.02 (0.17)	0.08 (0.23)
Deployed once (vs. none)	-0.01 (0.36)	0.05 (0.22)	-0.11 (1.08)	0.71 (0.79)	1.09 (0.73)	0.31 (0.24)	0.76 (0.33)
Deployed twice (vs. none)	0.18 (0.41)	0.22 (0.24)	-0.30 (1.16)	0.60 (0.84)	0.73 (0.80)	0.19 (0.26)	0.60 (0.37)
Deployed three or more times (vs. none)	0.06 (0.47)	0.30 (0.28)	0.14 (1.25)	0.88 (0.95)	0.51 (0.86)	0.15 (0.27)	0.56 (0.40)
Number of months parent deployed in last three years	0.02 (0.02)	-0.01 (0.01)	0.03 (0.04)	0.00 (0.03)	0.06 (0.03)	0.01 (0.01)	0.02 (0.01)

Analyses adjusted for child race; caregiver gender, age, and education; military service (e.g., Army, Navy), and acceptance to *Operation Purple*<sup>®</sup> Camp, and for multiple comparison testing using a Bonferroni correction.

<sup>a</sup>  $P < .01$ .

deployment ( $\beta = .12$ ;  $P < .01$ ). In addition, there was a positive association between caregiver report of general child emotional difficulties and caregiver and child report of deployment challenges ( $\beta = .14$ ,  $P < .01$ ;  $\beta = .05$ ,  $P < .01$ , respectively). In addition, on the basis of caregiver reports, total months deployed in the previous 3 years were significantly linked to a greater number of child difficulties during that deployment ( $\beta = .04$ ;  $P < .01$ ).

#### Difficulties During Reintegration (Deployed-Parent Return)

During reintegration, factors such as age, gender, caregiver mental health, caregiver report of child emotional difficulties, and total months deployed were critical. Increasing age was asso-

ciated with more challenges with parental reintegration, as reported by children ( $\beta = .10$ ;  $P < .01$ ). Similarly, on the basis of HCG and child reports, girls exhibited more difficulties than boys when the deployed parent returned home (HCG  $\beta = .37$ ,  $P < .01$ ; child  $\beta = .54$ ,  $P < .01$ ;  $\beta = .37$ ,  $P < .01$ , respectively). In addition, the positive association between child experience of emotional difficulties and reintegration challenges remained. Interestingly, caregivers who were employed outside the home reported more concerns about their child during reintegration ( $\beta = .32$ ;  $P < .01$ ), but this difference was not found during deployment. The total months that a parent was deployed was positively associated with child problems during

reintegration, but only on the basis of caregiver report ( $\beta = 0.04$ ,  $P < .01$ ).

## DISCUSSION

This study provides data on the well-being of military children and quantitatively demonstrates the differential experience of children of deployed personnel on the basis of the total months of parental deployment. In addition, this study offers insight that will guide continued intervention and research.

Our analysis uncovered important associations between a family's military background, deployment experience, and key child outcomes. Overall, caregivers and children from military families reported child emotional difficulties at higher levels than have been observed in the general US population.

**TABLE 5** Difficulties With Deployment Experience, as Reported by Child and Parent/Caregiver (*N* = 1328)

Variable	Child Difficulties During Parental Deployment		Child Difficulties During Parental Reintegration	
	Model 1 Caregiver Report $\beta$ (SE)	Model 2 Child Report $\beta$ (SE)	Model 3 Caregiver Report $\beta$ (SE)	Model 4 Child Report $\beta$ (SE)
<i>Military characteristics</i>				
Active component (vs. Guard/Reserve)	-0.17 (0.14)	0.17 (0.14)	-0.20 (0.14)	-0.02 (0.13)
E5-E6 (mid grade enlisted) (vs. E1-E4)	-0.22 (0.28)	-0.65 (0.26) <sup>a</sup>	-0.07 (0.28)	-0.33 (0.26)
E7-E9 (upper enlisted) (vs. E1-E4)	-0.10 (0.29)	-0.32 (0.27)	0.14 (0.28)	-0.11 (0.27)
Officer (vs. E1-E4)	-0.03 (0.30)	-0.50 (0.28)	-0.00 (0.29)	-0.02 (0.28)
<i>Child and caregiver characteristics</i>				
Female gender (child)	0.16 (0.12)	0.35 (0.11) <sup>b</sup>	0.37 (0.11) <sup>b</sup>	0.54 (0.11) <sup>b</sup>
Child age (years)	0.12 (0.04) <sup>b</sup>	0.06 (0.04)	0.08 (0.04)	0.10 (0.04) <sup>b</sup>
Caregiver employed	0.22 (0.13)	0.00 (0.12)	0.32 (0.12) <sup>b</sup>	0.19 (0.12)
Living in military housing (vs. rent)	-0.55 (0.21) <sup>b</sup>	-0.16 (0.20)	-0.16 (0.20)	0.07 (0.19)
Owning home (vs. rent)	-0.42 (0.19)	-0.10 (0.18)	-0.35 (0.18)	-0.06 (0.17)
Caregiver mental health	0.12 (0.02) <sup>b</sup>	0.04 (0.02) <sup>b</sup>	0.11 (0.02) <sup>b</sup>	0.02 (0.02)
Child emotional difficulties (caregiver report)	0.14 (0.01) <sup>b</sup>	0.05 (0.01) <sup>b</sup>	0.09 (0.01) <sup>b</sup>	0.05 (0.01) <sup>b</sup>
<i>Deployment experiences</i>				
Current deployment (vs. not)	-0.17 (0.15)	-0.02 (0.15)	-0.21 (0.14)	-0.12 (0.13)
Deployed twice (vs. once)	0.06 (0.16)	0.03 (0.16)	-0.12 (0.16)	0.06 (0.15)
Deployed three or more times (vs. once)	-0.02 (0.19)	0.07 (0.18)	-0.08 (0.18)	-0.05 (0.17)
Number of months parent deployed in last three years	0.04 (0.01) <sup>b</sup>	0.01 (0.01)	0.04 (0.01) <sup>b</sup>	0.02 (0.01)

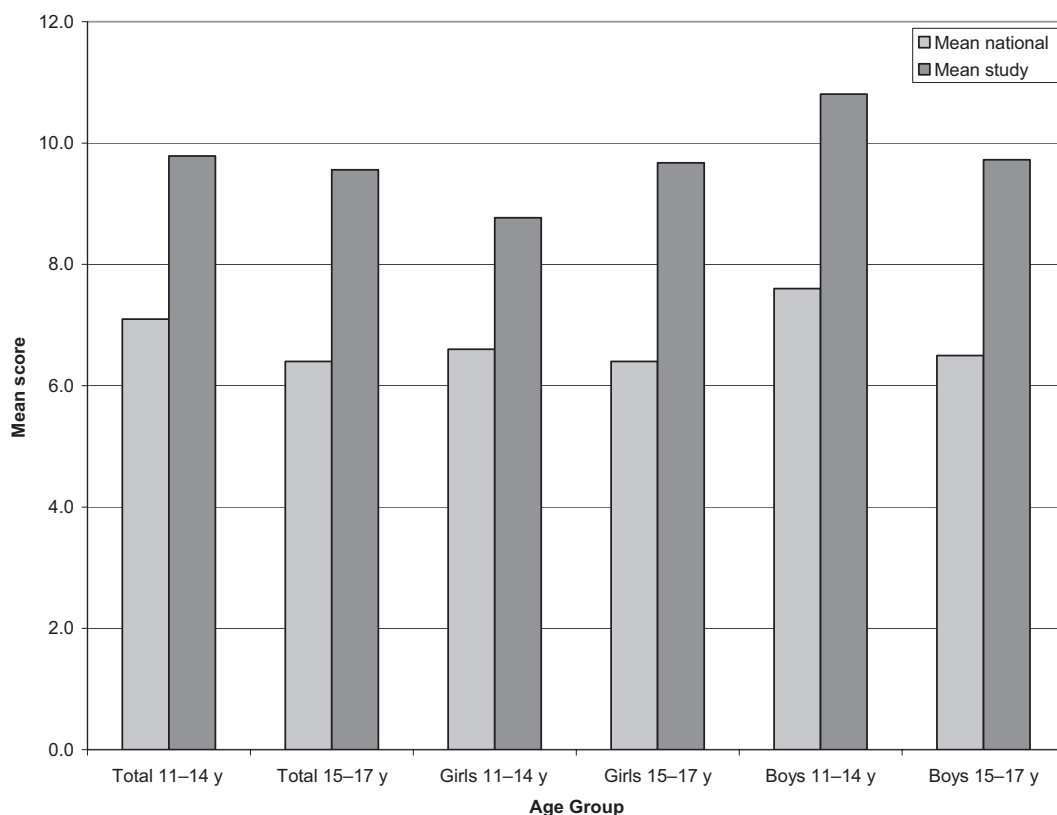
<sup>a</sup> *P* < .05; <sup>b</sup> *P* < .01.

Analyses restricted to those families experiencing at least one deployment in the last three years, and for which complete deployment history was provided. Analyses adjusted for child race; caregiver gender, age, and education; military service (e.g., Army, Navy); and acceptance to *Operation Purple*® Camp. Analyses adjusted for multiple comparison testing using a Bonferroni correction.

Two points should be kept in mind, however. The population-based norms come from the most recent data available (2001), but these norms may have changed in recent years. In addition, the cross-sectional analysis makes it difficult to discern whether the outcomes were deployment related. Nonetheless, our multivariate analyses identified difficulties regardless of deployment experience, suggesting that this group of military children may be experiencing more difficulties than their peers. Our analysis also revealed a link between caregiver mental health and child academic engagement and functioning, highlighting another possible factor contributing to children's well-being. These findings suggest that children from military families may be at greater risk for emotional or behavioral problems, which could be exacerbated by family stress or the HCG's reduced emotional health.

We also examined factors associated with children's deployment-related challenges. We found that the total months of parental deployment in the previous 3 years were strongly related to the number of challenges that children faced when the caregiver was away and returned. This finding contradicted our expectation that the number of difficulties would wane as deployments extended and families adjusted. Rather, this study showed a positive association between the number of deployment months and child difficulties, suggesting that with greater total months a parent is deployed (or absent from the home), the stressors of maintaining a healthy home life increase. For example, children may have more trouble handling household and school responsibilities as the deployment extends, attenuating any initial resilience in the early deployment months. In addition, children may experience more problems engaging with the deployed caregiver after his or her return if the parent is away from home for more months. Although these findings indicate concerns worth addressing, it should be noted that these statistically significant differences according to deployment length were found only by caregiver report and not child report. Other literature has shown that parent report of child mental health issues is not always valid, because parents lack formal training in diagnosing children's mental health status or may be influenced by their own mental health (eg, depression).<sup>26</sup>

Gender and age differences in deployment difficulties are also important to



**FIGURE 1**

Emotional and behavioral difficulties: comparison of sample with population-based sample of caregiver report (average score of difficulties) ( $n = 1495$ ). Analyses were restricted to all families but Coast Guard. Population-based data were from the National Health Interview Survey (2001). All differences between national and study scores are statistically significant at  $P < .01$  on the basis of a Welch's 2-sided  $t$  test.<sup>21</sup>

highlight. First, we found that girls had more problems with the reintegration period in particular. This could be explained by the roles that girls may occupy in the household when the military parent is away (eg, helping with household chores), issues related to connecting emotionally with an absent parent (usually the father), or difficulty that teenaged girls may have relating to their father. Second, many previous studies have focused on the problems faced by younger children,<sup>14,17</sup> but this research showed that older children, and in particular those in middle or later adolescence, were experiencing more problems with parental deployment and parental reintegration than their younger counterparts. Developmentally, this is logical: older children tend to assume more responsibilities in the household during a caregiver

absence<sup>27</sup> and, thus, may experience greater role shifting during deployment and reintegration.

Finally, there were other notable differences in deployment experience. First, living in on-base housing was related to fewer deployment challenges. Given the number of factors that determine a military family's housing situation, it will be important to learn about the reasons for renting in subsequent data-collection waves.<sup>28</sup> Second, caregivers who were employed reported more problems for children when the other caregiver returned from deployment, possibly because the household responsibility lines are unclear for children when there is another caregiver at home. Third, caregiver mental health was associated with children's reports of deployment challenges. It is

possible that deteriorating caregiver mental health may exacerbate child difficulties during the deployment and reintegration period. In fact, early studies of spouses indicated that deployment can have a negative impact on their well-being.<sup>11,29</sup> In addition, in recent studies, Guard and Reserve caregivers reported fewer supports for their families and worse mental health than those in the active component.<sup>30,31</sup>

Although these findings offer new insight on military children, a few study limitations should be explained. First, we sampled children from an applicant pool from the Operation Purple camp. Families that have the motivation to apply for this program may be distinct from other military families by either being less stressed or more



stressed than other families, thus needing the program for their children. In addition, our sample had limitations, including fewer families that were lower enlisted. We also had few fathers in the sample; thus, we do not know if the deployment experience is different for children when the mother is deployed. Second, although we sampled according to national deployment impact demographics (according to service and component), we were unable to fully meet that distribution. We did not find service differences in this analysis; however, we cannot be sure that service differences in child well-being, particularly with the Marines, do not exist. Third, our deployment-experience items were newly created for this study because there were no deployment impact measures for children. We assessed the measures for face and content validity, and noted that the scales had good internal consistency, yet additional analysis and use of the measures are needed to test their construct validity. Fourth, the cross-sectional nature of these data limits conclusions we can draw about deployment impact. However, longitudinal data are being collected for these families, which will enable us to examine changes in deployment histories as well as changes in children's well-being and deployment experiences.

## CONCLUSIONS

This study represents an important first step in understanding how military children are coping with deployments, how extended parental deployments are creating challenges, and how continued involvement in over-

seas conflicts may affect military children. The study also shows that additional research is needed. First, the strong finding linking caregiver mental health with child well-being and deployment-related difficulties highlights a need to examine the emotional health of these nondeployed caregivers and the stressors that they experience. Second, given the impact of military parent reintegration on children, more analysis is needed on how military parent mental health (eg, post-traumatic stress disorder) may affect children and the family. Third, via longitudinal analysis, it will be critical to know whether the association between cumulative time of parental deployment and child difficulties continues to worsen or if there is a juncture point at which these problems diminish. In addition, it will be important to analyze how child well-being changes as deployments continue. Fourth, a study that delves into the reasons girls and older youth may be having more challenges with deployment is merited. Finally, more research is needed to explore pathways through which other family characteristics, such as housing and parental employment, affect children's deployment experience.

These study findings also highlight several avenues for intervention. Overall, children in our sample experienced greater emotional or behavioral difficulties than their civilian counterparts. As a result, at least some military families may require more assistance in addressing their children's needs, via school programming, mental health services, or resources

that can be used in the home. Given that child difficulties were greater for families that experienced longer periods of parental absence in the previous 3 years, these families may benefit from targeted support to deal with these stressors at later points in the deployment, not simply during the initial stages. In addition, families in which caregivers are struggling with their own mental health may need more support for both the caregiver and child. Although those programs are being developed and implemented, we have few empirical data on program effectiveness. Girls and older youth are confronting more difficulties with deployment and reintegration; thus, they may require more assistance.

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## REFERENCES

1. Department of Defense, Public Affairs Office. *Number of Members Deployed by Service Component and Month/Year (Based on the Contingency Tracking Systems)*. 2007. Available at: [www.defenselink.mil/](http://www.defenselink.mil/).
2. Department of Defense. *Profile of the Military Community*. Washington, DC: Department of Defense; 2006
3. Seiffge-Krenke I. Causal links between stressful events, coping style, and adolescent symptomatology. *J Adolesc*. 2000; 23(6):675–691
4. McGonagle K, Kessler R. Chronic stress, acute stress, and depressive symptoms. *Am J Community Psychol*. 1990;18(5):681–706
5. Carlsmith, L. Effect of early father absence on scholastic aptitude. *Harv Educ Rev*. 1964; 34(1):3–21

6. Hillenbrand ED. Father absence in military families. *Fam Coord*. 1976;25(4):451–458
7. Pisano MC. *Implications of Deployed and Nondeployed Fathers on Seventh Graders' California Achievement Test Scores During a Military Crisis*. 1996. [http://eric.ed.gov/ERICDocs/data/ericdocs2sq1/content\\_storage\\_01/00000196/80/14/8f/40.pdf](http://eric.ed.gov/ERICDocs/data/ericdocs2sq1/content_storage_01/00000196/80/14/8f/40.pdf). Accessed October 19, 2009
8. Hiew, CC. Separated by their work: families with fathers living apart. *Environ Behav*. 1992;24(2):206–225
9. Zoroya, G. Troops' kids feel war toll. *USA Today*. June 24, 2009:1a
10. Jensen PS, Grogan, D, Xenakis, SN, Bain, MW. Father absence: effects on child and maternal psychopathology. *J Am Acad Child Adolesc Psychiatry*. 1989;28(2):171–175
11. Jensen PS, Martin D, Watanabe H. Children's response to parental separation during Operation Desert Storm. *J Am Acad Child Adolesc Psychiatr*. 1996;35(4):433–441
12. Levai M, Kaplan S, Ackermann R, Hammock M. The effect of father absence on the psychiatric hospitalization of Navy children. *Mil Med*. 1995;160(3):104–106
13. Barnes VA, Davis H, Treiber, FA. Perceived stress, heart rate, and blood pressure among adolescents with family members deployed in Operation Iraqi Freedom. *Mil Med*. 2007;172(1):40–43
14. Engel RC, Gallagher LB, Lyle DS. Military deployments and children's academic achievement: evidence from Department of Defense Education Activity Schools.
15. Flake E, Davis BE, Johnson PL. *Econ Educ Rev*. In press. The psychosocial effects of deployment on military children. *J Dev Behav Pediatr*. 2009;30(4):271–278
16. Huebner AJ, Mancini JA. *Adjustments Among Adolescents in Military Families When a Parent Is Deployed*. 2005. <http://mfri.megachiptech.com/content/reports/Adjustments%20among%20605.pdf>. Accessed October 19, 2009
17. Lyle DS. Using military deployments and job assignments to estimate the effect of parental absences and household relocations on children's academic achievement. *J Labor Econ*. 2006;24(2):32
18. Gibbs DA, Martin SL, Kupper LL, Johnson RE. Child maltreatment in enlisted soldiers' families during combat-related deployments. *JAMA*. 2007;298(5):528–535
19. Rentz ED, Marshall SW, Loomis D, Casteel C, Martin SL, Gibbs DA. Effect of deployment on the occurrence of child maltreatment in military and nonmilitary families. *Am J Epidemiol*. 2007;165(10):1199–1206
20. SAS Institute Inc. *SAS 9.1.3 Help and Documentation*. Cary, NC: SAS Institute Inc; 2002–2004
21. Goodman R. Psychometric properties of the Strengths and Difficulties Questionnaire. *J Am Acad Child Adolesc Psychiatry*. 2001;40(11):1337–1345
22. Benjamin R, Costello EJ, Warren M. Anxiety disorders in a pediatric sample. *J Anxiety Disord*. 1990;4(4):293–316
23. Birmaher B, Brent D, Chiappetta L, et al. Psychometric properties of the Screen for Child Anxiety Related Emotional Difficulties (SCARED): a replication study. *J Am Acad Child Adolesc Psychiatry*. 1999;38(10):1230–1236
24. Farrell AD, Kung EM, White KS, Valois RF. The structure of self-reported aggression, drug use, and delinquent behaviors during early adolescence. *J Clin Child Psychol*. 2000;29(2):282–292
25. Jaycox L, Stein BD, Paddock S, et al. Impact of teen depression on academic, social and physical functioning. *Pediatrics*. 2009;124(4). Available at: [www.pediatrics.org/cgi/content/full/124/4/e596](http://www.pediatrics.org/cgi/content/full/124/4/e596)
26. Youngstrom E, Izard C, Ackerman B. Dysphoria-related bias in maternal ratings of children. *J Consult Clin Psychol*. 1999;67(6):905–916
27. Weiss R. Growing up a little faster: the experience of growing up in a single parent household. *J Soc Issues*. 1979;35(4):97–111
28. Buddin R, Gresenz CR, Hosek SD, Elliott MN, Hawes-Dawson J. *An Evaluation of Housing Options for Military Families*. Santa Monica, CA: Rand Corporation; 1999. Rand MR-1020-OSD
29. Burrell LM, Adams GA, Durand DB, Castro CA. The impact of military lifestyle demands on well-being, Army, and family outcomes. *Armed Forces Soc*. 2006;33(1):43–58
30. Gastaneda L, Harrell M, Varda D, Hall K, Beckett M, Stern S. *Deployment Experiences of Guard and Reserve Families*. Santa Monica, CA: Rand Corporation; 2008
31. Chandra A, Burns R, Tanielian T, Jaycox L, Scott M. *Understanding the Impact of Deployment on Children and Families: Findings From a Pilot Study of Operation Purple Camp Participants*. Santa Monica, CA: Rand Corporation, 2008
32. Rosenthal D, Feldman S. The influence of perceived family and personal factors in self-reported school performance of Chinese and Western high school students. *J Res Adolesc*. 1991;11(2):135–154
33. Crick NR, Bigbee MA. Relational and overt forms of peer victimization: A multi-informant approach. *J Consult Clin Psychol*. 1998;66(2):337–347
34. Varni JW, Burwinkle TM, Seid M. The PedsQL 4.0 as a school population health measure: feasibility, reliability, and validity. *Qual Life Res*. 2006;15(2):203–215
35. Berwick DM, Murphy JM, Goldman PA, Ware JE, Barsky AJ, Weinstein MC. Performance of a five-item mental health screening test. *Med Care*. 1991;29(2):169–176

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