
DEPLOYMENT STATUS: A DIRECT OR INDIRECT EFFECT ON MOTHER–CHILD ATTACHMENT WITHIN A CANADIAN MILITARY CONTEXT?

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ABSTRACT: Research has suggested that military spouses experience increased depressive symptoms and parenting stress during a military member's deployment. A relationship between maternal depressive symptoms, parenting stress, and child attachment security has been found in the general population, as has an indication that social support may provide a buffering effect. While there appears to be an association between the emotional well-being of military spouses and child emotional well-being during deployment, data are limited regarding the association between maternal emotional well-being and child attachment security. The current study explores the association between deployment status and child attachment to the nonmilitary parent (i.e., the mother in this study) in a sample of 68 Canadian military families. Results revealed a significant impact of deployment status on maternal depressive symptoms and on quality of child attachment. The impact of deployment status on attachment was not mediated through the maternal variables, and despite a main effect of social support on the maternal variables, there was no moderating effect. Thus, our results suggest that deployment may affect child attachment independently of maternal well-being.

Keywords: child attachment, military, deployment, emotional well-being

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A military career is one that places high expectations and demands not only on military members but also on their families (Segal, 1986). Military families face unique stressors specifically related to a military lifestyle. Such stressors include frequent relocations, geographic separations from extended family and friends, and recurrent separations due to the military member's training obligations. One of the most significant sources of stress affecting these families appears to be the deployment of the military member (Harrison, Robson, Alabanese, Sanders, & Newburn-Cook, 2011). Significant global events over the last number of decades have resulted in more frequent and longer deployments to active combat zones (Allen, Rhoades, Stanley, & Markham, 2011; Dursun & Sodom, 2009). A recent longitudinal study (Rand Corporation, 2016) found that while military families tend to be resilient in the face of the challenges associated with deployment, deployment does appear to affect the functioning of military spouses and

their children. In the aforementioned study, deployment was associated with increased depressive symptoms for military spouses and emotional problems in children under 11 years of age (Rand Corporation, 2016). A number of other studies also have found that depressive symptoms and increased stress in military spouses may increase the risk of emotional and behavioral difficulties in their children (Creech, Hadley, & Borsari, 2014; Lester et al., 2010).

Research examining the impact of deployment status on Canadian military families has been limited, particularly for children under 6 years old. Studies examining the impact of deployment on young children have been based primarily on American samples; therefore, it is difficult to ascertain if results can be generalized to Canadian military families. Canada and the United States are distinctly different in terms of a number of demographic factors. For instance, less than 5% of the Canadian military identifies as visible minorities (Park, 2008), as compared to the American military in which 31.1% of active duty members identify as a visible minority (U.S. Department of Defense, 2012). Moreover, 87% of the American military minority population are enlisted members, increasing the likelihood for service in combat roles leading to a higher probability of deployment (U.S. Department of Defense, 2012). Furthermore, there is a greater likelihood that individuals

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from poor and disadvantaged environments join the American military than those from more advantageous socioeconomic environments (Lutz, 2008). Finally, American soldiers tend to deploy for longer periods, 12 to 18 months (Flake, Davis, Johnson, & Middleton, 2009), as compared to Canadian soldiers who are deployed on average from 6 to 9 months. Consequently, the distinct demographic differences found between American and Canadian military populations may cause deployment to have an impact on the two populations.

While deployment has been shown to affect both parent and child emotional functioning, one area that has received little research attention is the manner in which deployment affects the quality of the relationship between the child and military spouse. It has been well-documented that the quality of the parent–child relationship affects child emotional and social outcomes. One way to capture the quality of the parent–child relationship is through the concept of attachment. A secure attachment with one’s caregiver leads to prosocial behaviors, including better peer relationships, a longer attention span, and greater ego resiliency, as compared to children who have an insecure attachment with their caregiver (Thompson, 2008). Moreover, children with an insecure attachment are more likely to exhibit internalizing and externalizing behaviors (Bureau & Moss, 2010; Greenberg, Speltz, Deklyen, & Endriga, 1991; Moss, Bureau, Cyr, Mongeau, & St-Laurent, 2004; Shaw & Vondra, 1995).

Therefore, given the impact of attachment on a child’s emotional functioning, it is essential to determine how attachment security may be affected by significant life events such as the absence of a parent. Due to the limited research on the impact of deployment status on Canadian military families, the current study explored the impact of deployment status on the attachment relationship between Canadian military spouses and their children. Our study examined three groups of mother–child dyads: those in which the mother’s spouse was deployed, those in which the mother’s spouse was not deployed but was away on training, and those in which the mother’s spouse was at the home base. While we extended recruitment for our study to both fathers and mothers with military spouses, no fathers participated. We explored the main effect of deployment status on the attachment relationship between the mother and child, and the indirect effect of deployment status on the mother–child attachment relationship through maternal depressive symptoms and parenting stress. Finally, we explored the moderating role of social support on the relationship between deployment status and mother–child attachment, as well as the maternal variables.

CHILD–PARENT RELATIONSHIP QUALITY

Attachment theory is one way to conceptualize the quality of the parent–child relationship. Attachment theory views the parent as providing a secure base from which the child is able to explore the environment and a haven of safety in times of distress (Ainsworth, Blehar, Waters, & Wall, 1978). A parent’s consistent and sensitive response to a child’s distress is thought to foster the development

of a secure attachment whereas rejecting, inconsistent, or frightening parental responses are thought to be associated with the development of an insecure attachment. Moreover, factors influencing parental sensitivity are believed to affect the parent–child attachment relationship (Cowan, 1997).

Previous research has shown that child attachment is affected when parental sensitivity or availability changes significantly either because of stressful life events or interventions aimed at improving parental sensitivity (Moss, Cyr, Bureau, Tarabulsky, & Dubois-Comtois, 2005). Given the inherent stressors associated with a military lifestyle, particularly deployment, we hypothesized that deployment may affect child attachment security either directly (The child experiences anxiety and fear for the deployed parent’s safety or his or her own safety.) or indirectly through decreased parental availability. A mother’s emotional well-being is one factor thought to influence the mother–child attachment relationship (Belsky & Fearon, 2008).

MATERNAL EMOTIONAL WELL-BEING

Maternal depressive symptoms and parenting stress have been shown to affect a mother’s ability to respond sensitively to a child’s attachment needs. It has been well-documented that maternal depression during infancy and early childhood increases the risk of a child developing an insecure attachment (see Martins & Gaffan, 2000). Maternal depressive symptoms interfere with a mother’s ability to perceive her child’s needs and to respond appropriately (Trapolini, Ungerer, & McMahon, 2007). Parenting stress is another key factor that significantly affects a parent’s ability to provide optimal parental care. Parents who experience higher levels of stress exhibit less patience, sensitivity, and responsiveness to other family members (Repetti & Wood, 1997). Higher levels of stress also are linked to more rejecting and punitive parenting behaviors, thus increasing the risk of the child developing an insecure attachment to the parent (Moss et al., 2004).

Social support has been shown to act as a buffer against the damaging effects of parental depressive symptoms and parenting stress (Manuel, Martinson, Bledsoe-Mansori, & Bellamy, 2012). Parents who have strong social support networks appear to demonstrate more warmth and responsiveness toward their children (C.S. Lee, Lee, & August, 2011) and have more positive parent–child interactions. Parents who receive little social support outside of the family unit (e.g., friends, neighbors, community services) are restrictive and tend to be more punitive toward their children, which in turn affects the child’s attachment to the parent (Belsky, 1993).

IMPACT OF A MILITARY LIFESTYLE ON CHILD–PARENT ATTACHMENT AND PARENTAL WELL-BEING

There has been limited research examining the quality of the child–parent attachment relationship within a military context. While we were unable to locate any military studies assessing the quality of the child–parent context using observational data from child–parent interactions, we did find three American studies based on

parent-report data that appeared to find an association between deployment and attachment security (Barker & Berry, 2009; Posada, Longoria, Cocker, & Lu, 2011; Posada et al., 2015). For example, Barker and Berry (2009) found associations between child attachment behaviors (at the moment of reunion with the deployed parent as retrospectively reported by the nondeployed parent) and the length of deployment, number of deployment, and number of parenting stressors. Posada et al. (2011) found an association between quality of maternal care and children's security, and that as stress increases, the quality of maternal care decreases. Finally, Posada et al. (2015) found that deployment was directly and indirectly related (through maternal care) to current child attachment behaviors, as reported by mothers. Although the aforementioned studies are based on parental report rather than actual observation of child–parent interactions, the findings have suggested that the quality of maternal care impacts the child–parent attachment relationship.

Research has shown that factors associated with a military lifestyle, particularly deployment, negatively impact the emotional well-being of military spouses (Allen et al., 2011; Burrell, Adams, Durand, & Castro, 2006). A number of Canadian and American studies have reported elevated levels of depressive symptoms in spouses who have a partner deployed (prevalence between 8 and 70%: Dursun & Sudom, 2009; Eaton et al., 2008; Skomorovsky, 2014; Warner, Appenzeller, Warner, & Grieger, 2009). The literature also repeatedly has revealed higher levels of stress in the spouses of deployed soldiers than for those in normative samples (Dimiceli, Steinhardt, & Smith, 2010; Padden, Connors, & Agazio 2011). While deployment may be considered a major life stressor, it also increases the number of daily hassles experienced by military spouses (Warner et al., 2009). Having a spouse deployed not only leads the nondeployed spouse to experience increased worry and fear for their partner's safety but they also must assume additional responsibilities that may have been previously shared with their spouse (e.g., parenting, domestic and social responsibilities). Taken together, such factors increase the risk of reduced availability and responsiveness of the nondeployed parent, resulting in an increased risk of the child developing an insecure attachment.

Social support is one factor that may buffer against the demands of a military lifestyle. Social support from one's community as well as one's military unit has been associated with increased ability for spouses to cope with the demands of a military lifestyle, including deployment-related stressors (Spera, 2009; Westhuis, Fafara, & Ouellette, 2006). Moreover, as social support increases, the quality of maternal care increases (Posada et al., 2011), potentially mitigating the risk of developing an insecure attachment. However, the frequent relocations inherent to a military lifestyle might create challenges for military spouses to establish and maintain strong support networks (Flake et al., 2009), potentially having an adverse effect on the child–parent attachment relationship. Conversely, families who use the military resource centers and are surrounded by other military families might find it easier to develop strong social networks, which could buffer against the stressors associated with a military lifestyle.

While previous research has revealed that military families tend to be resilient, military deployment has been found to be associated with emotional difficulties for military spouses and their children. Therefore, it is important to understand the pathways leading to these difficulties to develop appropriate interventions and supports to further build resilience and mitigate the risks associated with a military lifestyle.

STUDY HYPOTHESES AND OBJECTIVES

In this study, we explored the role that deployment status has on the attachment relationship between Canadian military spouses and their young children, ages 1 to 6 years old. We first examined if there was a direct effect of deployment status on the child's attachment to the military spouse. Given the association between parental depressive symptoms, parenting stress, and child–parent attachment, we also explored if there was an indirect effect of deployment status on child attachment to the military spouse through these variables. In addition, we explored if military base location, military division, language, child age and gender, maternal education, and family income were associated with the child's attachment to the parent and to the maternal variables.

Objective 1

The first objective was to examine the impact of deployment status on the attachment relationship between the child and military spouse. We expected that the highest level of insecure attachment to the military spouse would be found in children with a parent deployed. Moreover, we expected higher levels of insecure attachment to the military spouse in children with a military parent away on training, as compared to those with a military parent stationed at the home base.

Objective 2

The second objective was to examine the impact of deployment status on maternal depressive symptoms and parenting stress. We expected that the highest levels of depressive symptoms and parenting stress would be found in mothers whose partner was deployed. Moreover, we expected higher levels of depressive symptoms and parenting stress in mothers whose partners were away on training, as compared to those whose partners were home.

Objective 3

The third objective explored whether the relationship between deployment status and attachment was mediated through maternal depressive symptoms and parenting stress. We hypothesised that if there was an effect of deployment status on child attachment security, the effect might be mediated through these two parental variables.

Objective 4

The fourth and final objective was to determine if social support moderated the relationship between deployment status and child attachment, and the relationship between deployment status and depressive symptoms and parenting stress. We hypothesized that deployment status would have a greater negative impact on child attachment and maternal well-being if mothers reported low satisfaction with social support.

METHOD

Participants

Participants for the current study were comprised of three military child–parent dyad groups. The parent was required to be the partner of a Canadian Forces military member. We extended recruitment for this study to fathers whose wives were military members; however, no fathers participated. In situations where both parents were military members, the parent providing the majority of the child care participated. Sixty-eight parent–child dyads participated in the study. Child participants (34 girls) ranged from 12 months to 6 years of age ($M = 45.21$ months, $SD = 17.51$ months). We assigned participants to one of three groups, categorized according to the military members' deployment status. Group 1 ($n = 15$) included those parent–child dyads in which the military partner was deployed, Group 2 ($n = 15$) included those parent–child dyads in which the military partner was away (e.g., training, imposed restriction) but not deployed, and Group 3 ($n = 38$) consisted of the parent–child dyads in which the military member was working from the home unit. We recruited participants from several Canadian Forces Bases across Central Canada through local Military Family Resource Centres (MFRCs). The majority of participating mothers had a college (32.4%) or University diploma (47%), and were employed at least part-time (55.8%). A majority of the families had an income above \$75,000 (61.8%); 50% the families were French-speaking, and the other half were English-speaking. Finally, military divisions were distributed as follows—Army: $n = 53$, Air Force: $n = 9$, and Navy: $n = 6$. The present study was approved by both the Social Science Research Review Board (Canadian Forces) and the Ethics Review Board (University).

Procedure and Measures

We scheduled a visit to the laboratory set up at the participating MFRC for child–parent dyads meeting eligibility criteria. Approximately 2 weeks prior to the laboratory visit, we mailed a series of questionnaires to participating parents (available in both French and English). Participants brought the completed questionnaires to the lab visit.

Social demographic questionnaire. The social demographic questionnaire included questions relating to the age and number of individuals living in the home, including the child participating in the study. We also obtained information regarding the rank and

classification of the military member, status of the military member, education and occupation of the participating parent, and military spouse's current employment status.

Maternal depressive symptoms. Parental depressive symptoms were assessed using the Patient Health Questionnaire (PHQ-9), a measure frequently used in studies with military populations. The PHQ-9 is a self-administered, nine-item depression module taken from the full Patient Health questionnaire. This instrument assesses depressive symptom severity over the prior 2-week period. Items are rated on a Likert-type scale of 0 (*never*) to 3 (*nearly every day*). Scores from each item are summed to yield a total score of depressive symptom severity. This depression measure has demonstrated good internal reliability and validity across several studies including a Canadian military sample (J.E.C. Lee, 2008). The French version of the PHQ-9 has been found to be valid as a screening tool (Carballeira et al., 2007). The α coefficient for the current study was .86.

Parenting stress. We used the third edition of the Parenting Stress Index (PSI) to assess the degree of stress that participants experience in their role as primary caregiver to their child (Abidin, 1995). This measure of parenting stress was preferred to global stress measures because we were primarily interested in how deployment affects stressors in the parent–child relationship. The PSI consists of 120 items focusing on three major dimensions of parenting stress in three core domains: child characteristics, parent characteristics, and situational/demographic life stress. The PSI has been validated for parents of children ranging from 1 month through 12 years of age (Abidin, 1995). Items are rated on a Likert-type scale of 1 (*strongly agree*) to 5 (*strongly disagree*) and are summed to yield a total score of parenting stress. The PSI is a widely used measure and demonstrates discriminant and construct validity, good internal consistency, and high test-retest reliability (Abidin, 1995). The PSI also showed similar psychometric properties when used in a French sample (Bigras, LaFreniere, & Dumas, 1996). The α coefficient for the total score in the current study was .95.

Satisfaction with social support. We measured social support using the Short Form Social Support Questionnaire (SSQ6), which assesses two dimensions of social support: the total number of individuals to provide support (six items), and one's satisfaction with his or her perceived level of support (six items). Items are based on a Likert-type scale with responses ranging from 1 (*very dissatisfied*) to 6 (*very satisfied*) (Sarason, Sarason, Sheerin, & Pierce, 1987). The SSQ6 is psychometrically sound with good internal reliability (Sarason et al., 1987). The SSQ6 also has demonstrated adequate reliability and validity in French samples (Rasclé, Bruchon-Schweitzer, & Sarason, 2005). In accordance with the suggestion made by Sarason et al. (1987) that it is one's perception of social support that leads to increased psychological well-being, it was decided that only the satisfaction with social support dimension would be maintained in the data analyses. The α coefficient for the current study was .91.

Attachment. We used the Infant Strange Situation (Ainsworth et al., 1978) and the Preschool Separation-Reunion procedure (Cassidy & Marvin with the MacArthur Working Group on Attachment, 1992) to assess attachment security in the child sample. We used the Infant Strange Situation for children under 2½ years old, and the Cassidy and Marvin (1992) Preschool Separation-Reunion for children 2½ years old and over. The Infant Strange Situation (Ainsworth et al., 1978) is a widely used procedure involving a series of separation and reunion with the parent and a stranger. Cassidy and Marvin's procedure is designed for preschool children (2–6 years of age) and consists of longer separation–reunion episodes, but the stranger is not involved in the procedure.

A child's proximity, contact seeking, avoidance and resistance to contact, and interaction behaviors provide a basis for categorizing behavior into one of four attachment classifications: secure, insecure-avoidant, insecure-ambivalent, and insecure-disorganized (Ainsworth et al., 1978, Main & Solomon, 1990). We also coded an additional type of insecurity (insecure-controlling) in the preschool procedure (Cassidy & Marvin, 1992). However, given that we lacked a sufficient sample size to detect differences across the insecure groups, we decided to focus on a secure versus insecure comparison. Reliable coders trained in assessing child attachment coded the data. Interrater reliability was calculated on 31% ($n = 21$) of the sample, and coders were blind to additional information on the dyads. For both coding systems, interrater agreement was 86%, $\kappa = .71$, and consensus was reached through discussion in case of disagreement between coders.

ANALYTIC PLAN

All analyses for this study were conducted using Version 21 of the IBM SPSS statistical software package, which includes a computation enabling bootstrapping of the sample data. Bootstrapping allows for reliable estimates of the *SEs* and confidence intervals (CIs) of a population by repeatedly resampling the original sample. We used bootstrapping for each of the analyses, given the relatively small sample size of our study and the fact that several of the analyses involved exploration of a mediating effect. A power analysis, using an *F* test for linear multiple regression, revealed that we had power to detect an effect size of .30 based on our sample size of 68 mother–child dyads, with three predictors and four controls.

Creation of Dummy Variables

Our deployment-status predictor variable violated the assumption for multiple regressions in that a categorical predictor variable can have only two categories. Therefore, we created dummy variables to address this violation by categorizing the three military groups; deployed, away, and home, into a deployed condition or an away condition. For the deployed condition, mothers who had a partner deployed were compared to mothers with a partner away but not deployed or who had a partner stationed at the home base. For the away condition, mothers who had a partner away were compared

with those mothers who had a partner deployed or at the home base.

RESULTS

Preliminary Analyses

The overall average rate of missing values was less than 1%. We used the expected maximization method to replace missing values, as this method is appropriate and sufficient when missing data are under 5% of the sample (Tabachnick & Fidell, 2007). Total scores of depressive symptoms and satisfaction with social support did not meet assumptions for normality and were transformed using either square root or log 10 methods. We identified no significant outliers.

Control variables. We conducted a series of analyses to examine the associations between the study variables and specific demographic variables such as location of military base, military division, language, child age and gender, maternal education, and family income. Bivariate correlation analyses revealed significant differences between parenting stress and caregiver education, $r = -.28$, $p = .02$, as well as family income, $r = -.25$, $p = .05$. In addition, significant differences were found across military base, $F(2, 65) = 3.60$, $p = .03$, Cohen's $d = .66$, and military division, $F(2, 65) = 4.11$, $p = .02$, Cohen's $d = .70$, with respect to participants' satisfaction with social support.

Differences compared with population. We also conducted preliminary analyses on the study variables to assess if there were differences between the descriptive statistics obtained in the military sample and those found in the general population (see Table 1).

Attachment. Within the general population, approximately 65% of children are classified as secure (van IJzendoorn & Kroonenberg, 1988). One-sample, nonparametric chi-square analyses showed that there was no difference between the overall military sample and the normative population, $p = .21$, with 57% ($n = 39$) of the sample being secure. However, further analyses revealed significantly more insecure attachment in the deployed group as compared to the general population, $p = .001$, with only 27% ($n = 4$) of this group classified as secure.

Depressive symptoms. The PHQ-9 has shown excellent psychometric qualities in American (Smith, Smith, Jacobson, Corbeil, & Ryan, 2007) and Canadian (J.E.C. Lee, 2008) military populations and therefore was chosen for the current study. A score between 0 and 4 on the PHQ-9 corresponds to minimal depressive symptoms whereas a score between 5 and 9 is indicative of mild depression. Moreover, a recent German study, using the PHQ-9 to assess depressive symptoms in a general-population sample, found that of 2,692 female participants, the overall mean for depressive symptoms was 2.51 ($SD = 3.01$) (Kocalevent, Hinz, & Braehler, 2013). Considering the lack of a meta-analysis on the PHQ-9, we

TABLE 1. Means and Standard Deviations for the Military Sample and Normative Sample for the Study Variables

	Military Overall <i>M (SD)</i>	Deployed <i>M (SD)</i>	Away <i>M (SD)</i>	Home <i>M (SD)</i>	Normative Population <i>M (SD)</i>
Depressive Symptoms	5.75 (4.90)	7.73 (5.93)	4.93 (4.74)	5.29 (4.42)	2.51 (3.01)
Parenting Stress	221.81 (42.62)	227.27 (42.36)	217.60 (28.86)	221.32 (47.70)	222.80 (6.20)
Social Support	5.00 (1.04)	5.18 (.77)	4.98 (.63)	4.95 (1.25)	

used this general-population sample as a base of comparison for our sample. A one-sample, nonparametric Kolmogorov–Smirnov test revealed significantly higher depressive symptoms in the military sample, as compared to the general-population sample, $p < .001$. Results also revealed higher depressive symptoms in the deployed and home groups, as compared to the general-population sample, $p < .001$, and $p < .01$, respectively.

Parenting stress. The mean for the total parenting stress score from validation studies in the general population has been found to be 222.8 ($SD = 6.2$) (Abidin, 1995). A one-sample, nonparametric Kolmogorov–Smirnov test found a statistically significant difference between the military sample and the general population, $p < .001$. A similar analysis also revealed significant differences between the deployed group, $p < .02$, and the home group, $p < .001$, as compared to a normative population.

Social support. After conducting an extensive review of the literature, in addition to contacting the author of the social support measure, it was determined that a comparative analysis would not be performed due to a lack of empirical data with a comparable sample.

Principal Analyses

Objective 1: Deployment status and child attachment. To determine if there was a main effect of deployment status on child attachment, a binary logistic regression analysis was performed with child attachment security as the outcome and deployment status as the predictor.

A test of the full model with the deployment-status predictor against a constant-only model was statistically significant, $\chi^2(2, N = 68) = 9.4, p < .01$, Cohen's $d = .80$, indicating that deployment status reliably distinguished secure from insecure child attachment. A Nagelkerke value of .17 indicated that deployment status accounted for approximately 17% of the variance in child attachment security. The Nagelkerke test is an adjusted version of the Cox and Snell test that amends the scale of the statistic to cover the full range from 0 to 1. According to the Wald statistic, only the deployment condition reliably predicted child attachment, $\chi^2(1, N = 68) = 4.60, p = .03$, Cohen's $d = .54$. The away condition was not a significant predictor of child attachment, $\chi^2(1, N = 68) = 1.75, p = .14$, Cohen's $d = .33$. An odds ratio of 4.22, 95% CI [1.13, 15.73], for the deployed condition suggests that a child is over four times more likely to be classified with an insecure attachment when the partner is deployed.

TABLE 2. Deployment as a Predictor of Maternal Depressive Symptoms and Parenting Stress

Predictor Variables	δR^2	δF	<i>df</i>	β
Depressive Symptoms				
Step 1	.06	1.97	2(65)	
Deploy (1 vs. 2 & 3) ^a				.23*
Away (2 vs. 1 & 3) ^a				-.03
Parenting Stress				
Step 1	.11	3.81*	2(65)	
Income				-.17
Maternal Education				-.22
Step 2	.11	.30	2(63)	
Deploy (1 vs. 2 & 3) ^a				.08
Away (2 vs. 1 & 3) ^a				-.03

^aMilitary status dummy coded (1 = deployed, 2 = away, 3 = home).

* $p < .05$.

Objective 2: Deployment status and maternal well-being variables. We conducted a series of regression analyses to determine the impact of deployment status on the maternal variables of depression and parenting stress. Results of a hierarchical regression analysis revealed that deployment status explained approximately 6% of the variance in maternal depressive symptoms, $R^2 = .057, F(2, 65) = 1.97, p = .15$. Military deployment was found to significantly predict maternal depressive symptoms, $p = .05$, 95% CI [.022, 1.22]. However, this result should be interpreted with caution, as the overall model was not significant, and the away condition did not significantly predict maternal depressive symptoms, $p = .81$, 95% CI [-.77, .59]. A separate hierarchical regression analysis showed that the deployed and the away conditions did not significantly predict parenting stress (for R^2 change values and regression coefficients, see Table 2).

Objective 3: Maternal variables as mediators on child attachment. Preacher and Hayes (2004) developed statistical approaches that allow one to conduct formal significance tests of the indirect effect in a mediation model, allowing greater power to detect a significant effect. We conducted a series of bootstrapping mediation analyses to determine if maternal depressive symptoms and parenting stress mediated the impact of deployment on child attachment. Results from the mediation analyses found a marginal effect of deployment on maternal depressive symptoms and confirmed the main effect of deployment on child attachment security. However, as can be seen from Table 3, the association between deployment and child

TABLE 3. *Military Status and Mediating Effects of Maternal Variables on Child Attachment*

Model Variables	<i>p</i>	95% CI	
		LL	UL
Mediator 1. Depressive Symptoms			
Military Status (X) on Depressive Symptoms (M)			
Deployed	.07 [†]	-.06	1.27
Away	.80	-.75	.58
Military Status (X) on Attachment (Y)			
Deployed	.03*	.12	2.83
Away	.18	-2.39	.46
Depressive Symptoms (M) on Attachment (Y)			
Total Effect of X on Y	.03*	.12	2.76
Direct Effect of X on Y	.03*	.12	2.83
Indirect effect of X on Y		-.51	.28
Mediator 1. Parenting Stress			
Military Status (X) on Parenting stress (M)			
Deployed	.53	-17.37	33.54
Away	.84	-27.37	22.73
Military Status (X) on Attachment (Y)			
Deployed	.03*	.17	2.86
Away	.19	-2.40	.48
Parenting stress (M) on Attachment (Y)			
Total Effect of X on Y	.03*	.16	2.84
Direct Effect of X on Y	.03*	.17	2.86
Indirect effect of X on Y		-.40	.16

Note. CI = confidence interval; LL = lower limit; UL = upper limit.

* $p < .05$. [†] $p < .10$.

attachment security was not mediated through maternal depressive symptoms or parenting stress.

Objective 4: Social support as a moderator. We conducted an analysis to determine whether satisfaction with social support had a moderating effect on the relationship between deployment and child attachment. We then conducted a series of moderation analyses to determine if there was a moderating effect of social support on the relationship between deployment and maternal depressive symptoms and parenting stress. Given the differences across military base location and military division on satisfaction with social support, we entered these variables into each analysis as controls. We added the income and maternal education variables as controls when conducting the moderating analysis on satisfaction with social support and the relationship between military status and parenting stress.

Social support and attachment. Results from the analysis revealed that satisfaction with social support did not moderate the relationship between deployment and attachment; $p = .19$, 95% CI [-2.60, 13.46]. Furthermore, there was no main effect of satisfaction with social support on child attachment, $p = .61$, 95% CI [-2.07, 3.51].

Social support and maternal variables. Results from a series of moderation analyses revealed that satisfaction with social

support did not moderate the relationship between deployment status and depressive symptoms and parenting stress. However, a main effect of satisfaction with social support on each of these two variables was found, $t(61) = -2.66$, $p < .01$, and $t(59) = -3.25$, $p < .01$, respectively.

DISCUSSION

The findings supported the main hypothesis that deployment significantly predicted child attachment. Indeed, the proportion of insecure child attachment was significantly higher in the deployed group, as compared to the away and home conditions. Moreover, the deployed group also had a significantly higher proportion of insecure attachment, as compared to the general population. To our knowledge, this is the first study examining the impact of deployment status on the attachment relationship between the child and military spouse using observational assessments. Therefore, it is difficult to know if the results are consistent with prior military samples. To understand why deployment would have an effect on attachment, we further explored the possible association with maternal variables such as depression and parenting stress. In the general population, research has supported a link between child attachment security and such maternal factors (Moss et al., 2004). We believed that these maternal variables would be especially relevant to parents with a partner deployed, given prior research showing military spouses of deployed soldiers exhibit elevated levels of depressive symptoms and parenting stress (Lester et al., 2010).

In partial support of our hypothesis, results showed a significant effect of deployment on maternal depressive symptoms; however, this effect was modest, and the overall model was not significant. This finding is somewhat consistent with prior studies that have reported elevated levels of depressive symptoms in spouses with a deployed partner. Note that most studies with military families have been conducted in the United States, and the few that have been conducted in Canada have collected survey data from large samples and did not include comparisons with the general population (Dursun & Sudom, 2009; Skomorovsky, 2014). The higher mean of reported depressive symptoms found in our overall sample, as compared to a general-population sample, suggests that characteristics inherent to a military lifestyle may increase the risk of depressive symptoms in military spouses. It is possible that the current study lacked power to detect group differences within our sample, given that we found an overall higher level of depressive symptoms when compared to the general population. It is reasonable to assume that in a larger sample, the marginal effect might have been significant.

Contrary to our expectations, we did not find support for our hypothesis regarding the association between deployment status and parenting stress. Our results were inconsistent with previous research that has found a significant increase in parenting stress when a partner is deployed (Flake et al., 2009). Although the overall results indicate a statistical difference between a general-population sample and the deployed and home groups, the clinical relevance is minimal. The lack of an effect of deployment status

on parenting stress found in our study may be associated with factors known to buffer against the effects of parenting stress. Most studies examining the impact of deployment on parenting stress have been based on American military samples, which differ from the Canadian military population on a number of key demographic elements, particularly income and minority status (Mowat, 2011). Indeed, there is a greater likelihood that individuals from poor and disadvantaged environments join the American military (Lutz, 2008). Conversely, within a Canadian context, these demographic factors do not predict military service (Mowat, 2011). Flake et al. (2009) found that younger military parents, with lower incomes and a shorter duration of marriage, were more likely to report higher levels of parenting stress especially when a partner was deployed. Conversely, employed participants with higher education and income levels as well as those who used military supports reported significantly less parenting stress when their partner was deployed. In our study, we found a negative association between parenting stress and income and education. However, note that 94% of the sample had a household income of over \$50,000, and 79% had a college diploma or higher education. A recent Canadian study with military spouses found similar results in terms of education and income (Dursun & Sudom, 2009). These results suggest that overall, Canadian military families are reasonably well-educated and maintain a household income comparable to the general population. Consequently, income and education may have had a buffering effect on parenting stress in our study.

Another contributing factor potentially affecting parenting stress in American versus Canadian military families may relate to the length of deployments. American soldiers are typically deployed for 12 to 18 months (Flake et al., 2009) whereas Canadian soldiers are deployed for 6 to 9 months, on average. Parenting stress for the nondeployed spouse has been shown to increase the longer the soldier is deployed, with research showing that longer deployments are associated with poor adjustment for both children and the nondeployed parent (De Burgh, White, Fear, & Iverson, 2011). Finally, we recruited participants through their local MFRCs, suggesting that these mothers were accessing additional supports such as respite childcare, deployment support groups, and child playgroups. Moreover, many MFRCs offer parenting education (e.g., parenting courses), which may have provided participants with tools to further manage the stressors associated with their partners' deployment. It would be interesting, in future studies, to compare American and Canadian military samples on various dimensions in a longitudinal design (e.g., quality of couples' relationships prior and after deployment, access to psychological services). With increasingly difficult missions (Dursun & Sudom, 2009), it is possible that Canadians militaries will experience increased mental health problems, which could affect their behavior and impact on their families.

Contrary to our expectations, the impact of deployment status on attachment was not mediated through maternal depressive symptoms and parenting stress. The lack of a mediating effect of these maternal variables suggests that deployment may influence

child attachment through a different pathway than is commonly seen in the general population.

Satisfaction with social support did not moderate the relationship between military status and child attachment nor did it moderate the relationship between military status and the maternal variables of depressive symptoms, parenting stress, and marital satisfaction. However, consistent with previous research, results showed a negative association between satisfaction with social support and depressive symptoms and parenting stress (Dimiceli et al., 2010). The lack of a moderating effect found for satisfaction with social support may relate to the little variance shown in satisfaction with social support across the three groups.

Our results suggest that having a parent deployed may influence child attachment through a different pathway than that found in normative populations. One possible explanation for the higher proportion of insecure children in the deployed group may relate to the emotional well-being of the children. Anxiety regarding the availability and responsiveness of the attachment figure leads to the development of insecure attachment in children (Colonnesi et al., 2011). A recent survey of military families found that over 68% of respondents with a partner deployed reported that their children demonstrated some form of anxiety, such as significant worry, crying, sleep difficulties, and fear of being left by the nonmilitary parent (Blue Star Families, Department of Research and Policy, 2013). Other studies also have cited anxiety as a significant issue for children of deployed parents (Barker & Berry, 2009; Flake et al., 2009). It is reasonable to assume that children who have experienced the loss of a parent through deployment, though in most cases temporary, might develop increased worry and anxiety related to the availability of the remaining parent.

As a result, these children may be at increased risk for developing an insecure attachment to the remaining parent. Another possible explanation may be that although parents might cope well with deployment-related stressors, they may still experience considerable anxiety regarding their partners' safety, as well as the impact of the deployment on their children's emotional functioning. In fact, parental concern about the long-term emotional-being of their children has been identified as a significant worry in a number of studies (Allen et al., 2011; Blue Star Families, Department of Research and Policy, 2013). Such anxiety experienced by the nondeployed parent could negatively affect their emotional availability and the child's attachment security. Moreover, military spouses with a deployed partner are left to manage multiple tasks associated with operating a household (Burrell et al., 2006). Assuming responsibility for these additional tasks would likely affect a mother's availability and responsiveness.

Limitations

Given our sample size, we were unable to conduct analyses on the attachment insecure subtypes (e.g., disorganization), which may have given us further insight into the dynamics impacting child attachment in the deployed group. The lack of mediation effects found in our study may be related to reduced power, given our

smaller sample. Furthermore, because this was not a longitudinal design, we were unaware of the child's attachment classification before deployment. Although using a longitudinal sample to study the impact of deployment on attachment would be ideal, in practice it would be very difficult. Recruiting military families to participate in studies using observational methods is challenging at best, given a military culture of privacy. Moreover, to assess child attachment before deployment, one would have to know beforehand which families were going to deploy, which would be difficult to determine. Another limitation relates to the considerable age range of the child participants within our study. While there was no association found between age of the child and attachment classification, a larger sample size would have allowed us to conduct analyses on specific age categories. Such analyses may have revealed that deployment affects child attachment differently depending on the child's age. Due to the scope of the current study, we did not assess maternal emotional availability, although maternal insensitivity may account for some of the variance of the relationship between deployment and insecure attachment. Future studies should explore this association. The number and length of previous deployments as well as the length of the current deployment are additional areas that would be important to explore in future studies. However, we do know that the majority of our participants in the deployed group had a partner deployed to Afghanistan, which is known as one of the most dangerous missions that Canadian soldiers have embarked on in recent years. Sample size precluded information on specific subtypes of attachment. However, considering that this is one of the first studies, to our knowledge, showing a direct effect of deployment on attachment, these results should guide further research and inform practice for clinicians working with military families.

A final limitation is the selection bias and demographic characteristics of the current sample. Overall, this sample was reasonably well-educated and economically stable. They also were recruited through local MFRCs, suggesting that they were using the supports available to military families. However, even though our sample was not at socioeconomic risk, our results suggest that deployment may still influence child attachment in a negative manner.

Conclusion and Implications for Intervention

In the current climate of global instability, it is unlikely that the number of military deployments will decrease. Given that more deployed military members have children than in previous conflicts (e.g., World War I and II, Vietnam), it is vital that parents, educators, and other professionals understand how deployment impacts military children, particularly in the area of child–parent attachment. In our study, we found an association between deployment status and the quality of the child's attachment relationship with the nondeployed spouse. It is well-known that children with an insecure attachment are at increased risk for emotional and social difficulties across the life span.

Although our results suggest that deployment is associated with child attachment insecurity, this association does not appear to be mediated through maternal emotional well-being. Therefore, more research is necessary to identify the specific factors associated with deployment that may lead to insecure attachment. While military families demonstrate remarkable resilience in the face of challenges, further research is necessary to focus on the specific factors associated with deployment that may lead to child insecure attachment. As a result, such research will provide data on specific areas to be targeted through interventions and support. As previously noted, our sample was recruited through MFRCs in which participants may have already been accessing resources that may have buffered against the negative effects of deployment on parent and child well-being. Yet, despite accessing these resources, deployment appears to have an impact on child attachment security. Therefore, future studies should explore the impact of accessing resources versus not accessing resources on parent and child well-being. The purpose of our study is not to suggest that a military career is a poor life choice or that parents should not be deployed but rather that research focus on factors that mitigate the potential risk for negative outcomes on military families.

REFERENCES

- Abidin, R.R. (1995). *Parenting Stress Index* (3rd ed.). Odessa, FL: Psychological Assessment Resources.
- Ainsworth, M.D.S., Blehar, M., Waters, E., & Wall, S. (1978). *Patterns of attachment*. Hillsdale, NJ: Erlbaum.
- Allen, E.S., Rhoades, G.K., Stanley, S.M., & Markham, H.J. (2011). On the home front: Stress for recently deployed army couples. *Family Processes*, 50, 235–247. <https://doi/10.1111/j.1545-5300.2011.01357.x>
- Barker, L.H., & Berry, K.D. (2009). Developmental issues impacting military families with young children during single and multiple deployments. *Military Medicine*, 174(10), 1033–1040. <https://doi.org/10.7205/MILMED-D-04-1108>
- Belsky, J. (1993). Etiology of child maltreatment: A developmental-ecological analysis. *Psychological Bulletin*, 114, 413–434. <https://doi.org/10.1037/0033-2909.114.3.413>
- Belsky, J., & Fearon, R.M. (2008). Precursors to attachment security. In J.Cassidy & P.R. Shaver (Eds.), *Handbook of attachment: Theory, research and clinical applications* (pp. 295–311). New York: Guilford Press.
- Bigras, M., LaFreniere, P.L., & Dumas, J.E. (1996). Discriminant validity of the Parent and Child scales of the Parenting Stress Index. *Early Education and Development*, 7, 167–178. https://doi.org/10.1207/s15566935eed0702_5
- Blue Star Families, Department of Research and Policy. (2013). *Military Family Lifestyle Survey: Findings and Analysis*. Washington, D.C. March 2013. Retrieved from <http://www.bluestarfam.s3.amazonaws.com/42/65/a/1110/CompReport2013.pdf>. On October 21, 2014.
- Bureau, J.F., & Moss, E. (2010). Behavioural precursors of attachment representations in middle childhood and links with child social adaptation. *British Journal of Developmental Psychology*, 28, 657–677.

- Burrell, L.M., Adams, G.A., Durand, D.B., & Castro, C.A. (2006). The impact of military lifestyle demands on well-being, army, and family outcomes. *Armed Forces & Society*, 33, 43–63. <https://doi.org/10.1177/0002764206288804>
- Carballeira, Y., Dumont, P., Borgacci, S., Rentsch, D., De Tonnac, N., Archinard, M., & Andreoli, A. (2007). Criterion validity of the French version of Patient Health Questionnaire (PHQ) in a hospital department of internal medicine. *Psychology and Psychotherapy: Theory, Research and Practice*, 80, 69–77. <https://doi.org/10.1348/147608306X103641>
- Cassidy, J., & Marvin, R.S., with the MacArthur Working Group on Attachment. (1992). Attachment organization in three and four year olds: Procedures and coding manual. Unpublished manuscript, University of Virginia.
- Colonesi, C., Draijer, E.M., Jan, G., Stams, J.M., Van der Bruggen, C., Bogels, S., & Noom, M.J. (2011). The relation between insecure attachment and child anxiety: A meta-analytic review. *Journal of Clinical Child & Adolescent Psychology*, 40(4), 630–645. <https://doi.org/10.1080/15374416.2011.581623>
- Cowan, P.A. (1997). Beyond meta-analysis: A plea for a family systems view of attachment. *Child Development*, 68, 601–603. <https://doi.org/10.2307/1132111>
- Creech, S.K., Hadley, W., & Borsari, B. (2014). The impact of military deployment and reintegration on children and parenting: A systematic review. *Professional Psychology: Research and Practice*, 45(6), 452–464. <https://doi.org/10.1037/a0035055>
- De Burgh, C., White, C., Fear, N., & Iverson, A.C. (2011). The impact of deployment to Iraq or Afghanistan on partners and wives of military personnel. *International Review of Psychiatry*, 23, 192–200. <https://doi.org/10.3109/09540261.2011.560144>
- Dimiceli, E., Steinhardt, M.A., & Smith, S.E. (2010). Stressful experiences, coping strategies, and predictors of health-related outcomes among wives of military servicemen. *Armed Forces & Society*, 36, 351–373. <https://doi.org/10.1177/0095327x08324765>
- Dursun, S., & Sudom, K. (2009). Impact of military life on families: Results from the Perstempo Survey of Canadian Forces Spouses (DGMPRA TR 2009 XX). Department of National Defence, Ottawa, Ontario.
- Eaton, K.M., Hoge, C.W., Messer, S.C., Whitt, A.A., Cabrera, O.A., McGurk, D. et al. (2008). Prevalence of mental health problems, treatment needs, and barriers to care among primary care-seeking spouses of military service members involved in Iraq and Afghanistan deployments. *Military Medicine*, 173(11), 1051–1056. <https://doi.org/10.7205/MILMED.173.11.1051>
- Flake, E.M., Davis, B.E., Johnson, P.L., & Middleton, L.S. (2009). The psychosocial effects of deployment on military children. *Journal of Developmental & Behavioral Pediatrics*, 30, 271–278. <https://doi.org/10.1097/DBP.0b013e3181aac6e4>
- Greenberg, M., Speltz, M.L., Deklyen, M., & Endriga, M.C. (1991). Attachment security in preschoolers with and without externalizing behavior problems: A replication. *Development and Psychopathology*, 3, 413–430.
- Harrison, D., Robson, K., Albanese, P., Sanders, C., & Newburn-Cook, C. (2011). The impact of shared location on the mental health of military and civilian adolescents in a community affected by frequent deployments: A research note. *Armed Forces & Society*, 37(3), 550–560. <https://doi.org/10.1177/0095327X11398749>
- Kocalevent, R.D., Hinz, A., & Braehler, E. (2013). Standardization of the depression screener Patient Health Questionnaire (PHQ-9) in the general population. *General Hospital Psychiatry*, 35, 551–555. <https://doi.org/10.1016/j.genhosppsych.2013.04.006>
- Lee, C.S., Lee, J., & August, G.J. (2011). Financial stress, parental depressive symptoms, parenting practices, and children's externalizing problem behaviors: Underlying processes. *Family Relations*, 60, 476–490. <https://doi.org/10.1111/j.1741-3729.2011.00656.x>
- Lee, J.E.C. (2008). Psychometric properties of psychological scales in the Recruit Health Questionnaire (DRDC CORA TM 2008–048). Ottawa, Ontario: Department of National Defence, Centre for Operational Research and Analysis.
- Lester, P., Peterson, K., Reeves, J., Knauss, L., Glover, D., Mogil, C., & Beardslee, W. (2010). The long war and parental combat deployment: Effects on military children and at-home spouses. *Journal of the American Academy of Child & Adolescent Psychiatry*, 49, 310–320.
- Lutz, A. (2008). Who joins the military? A look at race, class, and immigration status. *Journal of Political and Military Sociology*, 36(2), 167–188. <https://doi.org/10.1.1.471.9635>
- Main, M., & Solomon, J. (1990). Procedure for identifying infants as disorganized/disoriented during the Ainsworth Strange Situation. In M. Greenberg, D. Cicchetti, & M. Cummings (Eds.), *Attachment in the preschool years: Theory, research, and intervention* (pp. 121–160). Chicago: University of Chicago Press.
- Manuel, J., Martinson, M., Bledsoe-Mansori, S.E., & Bellamy, J.L. (2012). The influence of stress and social support on depressive symptoms in mothers with young children. *Social Science & Medicine*, 75(11), 2013–2020. <https://doi.org/10.1016/j.socscimed.2012.07.034>
- Martins, C., & Gaffan, E.A. (2000). Effects of early maternal depression on patterns of infant-mother attachment: A meta-analytic investigation. *Journal of Child Psychology and Psychiatry*, 41(6), 737–746. <https://doi.org/10.1111/1469-7610.00661>
- Moss, E., Bureau, J.F., Cyr, C., Mongeau, C., & St-Laurent, D. (2004). Correlates of attachment at age 3: Construct validity of the preschool attachment classification system. *Developmental Psychology*, 40(3), 323–334. <https://doi.org/10.1037/0012-1649.40.3.323>
- Moss, E., Cyr, C., Bureau, J.-F., Tarabulsky, G., & Dubois-Comtois, K. (2005). Stability of attachment between preschool and early school-age and factors contributing to continuity/discontinuity. *Developmental Psychology*, 41, 773–783.
- Mowat, V.R. (2011). Who joins the Canadian Forces? Developing a framework for analysis using Bourdieu, Habermas, and Giddens. Unpublished master's thesis. University of Saskatchewan, Saskatoon, Canada.
- Padden, D., Connors, R.A., & Agazio, J.G. (2011). Stress, coping, and well-being in military spouses during deployment separation. *Western Journal of Nursing Research*, 33, 247–267. <https://doi.org/10.1177/0193945910371319>
- Park, J. (2008). A profile of the Canadian Forces. Perspectives on labour and income (Vol. 9, No. 7). Retrieved from

- <http://www.statcan.gc.ca/pub/75-001-x/2008107/pdf/10657-eng.pdf>. On July 1st, 2008.
- Posada, G., Longoria, N., Cocker, C. & Lu, T. (2011). Attachment ties in military families: Mothers' perceptions of interactions with their children, stress, and social competence. In S.M. Wadsworth & D. Wadsworth (Eds.), *Risk and resilience in U.S. military families* (pp 131–147). New York: Springer.
- Posada, G., Walker, D., Cardin, J., Nyaronga, D., Schwarz, R., & Wadsworth, S. (2015). Maternal perspectives on deployment and child–mother relationships in military families. *Family Relations*, 64, 651–664. <https://doi.org/10.1111/fare.12165>
- Preacher, K.J., & Hayes, A.F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers*, 36, 717–731.
- RAND Corporation. (2016). *The Deployment Life Study: Longitudinal analysis of military families across the deployment cycle*. Santa Monica, CA: Author.
- Rasclé, N., Bruchon-Schwietzer, M., & Sarason, I.G. (2005). Short form of Sarason's Social Support Questionnaire: French adaptation and validation. *Psychological Reports*, 97, 195–202. <https://doi.org/10.2466/pr0.97.1.195-202>
- Repetti, R., & Wood, J. (1997). Effects of daily stressors at work on mothers' interactions with preschoolers. *Journal of Family Psychology*, 11, 90–108. <https://doi.org/10.1037/0893-3200.11.1.90>
- Sarason, I.G., Sarason, B.R., Sheerin, E.N., & Pierce, G.R. (1987). A brief measure of social support: Practical and theoretical implications. *Journal of Social and Personal Relationships*, 4, 497–510. <https://doi.org/10.1177/0265407587044007>
- Segal, M.W. (1986). The military and the family as greedy institutions. *Armed Forces & Society*, 13, 9–38. <https://doi.org/10.1177/0095327X8601300101>
- Shaw, D.S., & Vondra, J.L. (1995). Infant attachment security and maternal predictors of early behavior problems. A longitudinal study of low-income families. *Journal of Abnormal Child Psychology*, 23(3), 335–357.
- Skomorovsky, A. (2014). Deployment stress and well-being among military spouses: The role of social support. *Military Psychology*, 26(1), 44–54. <https://doi.org/10.1037/mil0000029>
- Smith, T.C., Smith, B., Jacobson, I.G., Corbeil, T.E., & Ryan, M.A.K. (2007). Reliability of standard health instruments in a large, population-based cohort study. *Annals of Epidemiology*, 17, 525–532. <https://doi.org/10.1016/j.annepidem.2006.12.002>
- Spera, C. (2009). Spouses' ability to cope with deployment and adjust to Air Force family demands: Identification of risk and protective factors. *Armed Forces & Society*, 35(2), 286–306. <https://doi.org/10.1177/0095327x08316150>
- Tabachnick, B.G., & Fidell, L.S. (2007). *Using multivariate statistics* (5th ed.). Boston: Pearson Education.
- Thompson, R.A. (2008). Early attachment and later development. In J.Cassidy & P.R. Shaver (Eds.), *Handbook of attachment: Theory, research and clinical applications* (pp. 348–365). New York: Guilford Press.
- Trapolini, T., Ungerer, J.A., & McMahon, C.A. (2007). Maternal depression and children's attachment representations during the preschool years. *British Journal of Developmental Psychology*, 25, 247–261. <https://doi.org/10.1348/026151006X118739>
- U.S. Department of Defense. (2012, September 1). 2012 Demographics: Profile of the military community. Retrieved from <http://www.militaryonesource.mil/>. On September 1st, 2013.
- van IJzendoorn, M., & Kroonenberg, P.M. (1988). Cross-cultural patterns of attachment: A meta analysis of the Strange Situation. *Child Development*, 59, 147–156. <https://doi.org/10.2307/1130396>
- Warner, C.H., Appenzeller, G.N., Warner, C.M., & Grieger, T. (2009). Psychological effects of deployments on military families. *Psychiatric Annals*, 39(2), 56–63. <https://doi.org/10.3928/00485713-20090201-11>
- Westhuis, D.J., Fafara, R.J., & Ouellette, P. (2006). Does ethnicity affect the coping of military spouses? *Armed Forces & Society*, 32(4), 584–603. <https://doi.org/10.1177/0095327X06287050>