

Couples Coping Through Deployment: Findings From a Sample of National Guard Families

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Objective: Military families face numerous changes and stresses as they negotiate deployments and other life transitions. How they cope with these events is an important part of their overall well-being and resilience. This longitudinal study on coping in a sample of National Guard couples examined the association between the predeployment coping (active vs. avoidant) of each in the relationship, and their own and their significant others' mental health (anxiety, depression, posttraumatic stress disorder [PTSD]) and family well-being (dyadic adjustment and parenting stress) postdeployment.

Method: A total of 238 matched couples completed the predeployment survey, 143 matched couples completed the post, with 122 matched couples completing both pre- and postdeployment surveys.

Results: While active coping was not significantly associated with any outcomes, predeployment avoidant coping in both soldiers and significant others was associated with increased anxiety, PTSD, and depression post deployment (actor effects). Additionally, soldier avoidant coping predeployment was associated with increased parenting stress for soldiers, while significant other avoidant coping predeployment was associated with increased relationship distress for significant others (actor effects). Finally, significant other avoidant coping predeployment was associated with higher parenting distress for soldiers postdeployment (partner effect). **Conclusion:** Findings suggest that interventions are needed to combat avoidant coping (behavioral disengagement, denial, substance abuse) predeployment because this way of coping is strongly related to negative outcomes. In addition, those who work clinically with these families should work to reduce avoidant coping strategies and any familial dynamics exacerbated by this way of coping. © 2017 Wiley Periodicals, Inc. *J. Clin. Psychol.* 00:1–15, 2017.

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Military families are under stress, especially during times of deployment and reintegration, and coping with multiple stressors is an important aspect of resilience. During the deployment cycle, the family prepares for separation (predeployment), goes through an extended time apart (deployment), and negotiates the shifts in roles and relationships when the service member returns home (reintegration; Blow et al., 2012; Pincus, House, Christenson, & Adler, 2001). Each of these stages and associated transitions present a series of challenges to a couple, each of which needs to be negotiated for optimal family functioning to occur. These challenges are well-documented in the literature and include, but are not limited to, changing family roles on

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multiple occasions, dealing with transitions, facing difficult life events, and adapting to new circumstances and environments (Wiens & Boss, 2006).

Some military couples struggle throughout the cycles of deployment, while others display high levels of resilience, demonstrated by adaptability, managing difficult experiences, and even growth (MacDermid Wadsworth, 2010; MacDermid Wadsworth, Samper, Schwarz, Nishida, & Nyaronga, 2008). Some of these differences are related to how individuals cope with difficult life events. Several studies have looked at the different ways individuals cope with stress, some of which have focused on military populations (Creech, Benzer, Liebsack, Proctor, & Taft, 2013; Mattocks et al., 2012). However, only a few studies have examined coping processes in couples and, in particular, military couples as they face deployment and reintegration.

In the current study, we explored coping in National Guard military couples before a deployment cycle. At predeployment, participants were asked to complete a measure of coping (Brief-COPE; Carver, 1997) in response to a question posed about the respondent's coping approach since finding out about the deployment. We then examined the relationship between active and avoidant coping at predeployment and mental health and family well-being outcomes in the sample postdeployment.

Active coping occurs when an individual deliberately does something to reduce the stress of their situation, such as working to see the situation in a different (positive) light, coming to acceptance of the situation, developing strategies to manage the situation, and turning to others for support, understanding, or advice. In contrast, avoidant coping can be characterized by an individual who is in a high level of denial about the stressful situation, avoids dealing with the situation (gives up), or uses drugs or alcohol to help get through the situation.

The population focus of this study is the National Guard, members of the military who manage significant demands as they balance both military and civilian worlds. The National Guard forces are an integral component of the United States military, and face unique circumstances distinguished from their active duty counterparts, circumstances that call for effective coping strategies (Booth et al., 2007; Gorman, Blow, Ames, & Reed, 2011). The largest stressors for these citizen soldiers necessitate transitions into and out of military active duty status and civilian life, and for these service members, stress-filled transitions are frequent and unpredictable (Vogt, Samper, King, King, & Martin, 2008). Of note, these families are required to face more transitions without all of the built-in supports of active duty life and in communities that are often not equipped to offer optimal support (Blow et al., 2012). The literature suggests that these National Guard service members may experience more difficulties than active duty members, but findings are still mixed (Cohen, Fink, Sampson, & Galea, 2015; Milliken, Auchterlonie, & Hoge, 2007).

Although there is a growing body of research related to our understanding of family well-being through the deployment cycle, there are still significant gaps in our knowledge, particularly when it comes to coping in National Guard families (Allen, Rhoades, Stanley, & Markman, 2010; Gorman et al., 2011; Mansfield et al., 2010). Family strains can be exacerbated by mental health symptoms and related family difficulties, which are present in up to 40% of National Guard service members and 36% of significant others postdeployment (Gorman et al., 2011). In short, these family systems face numerous challenges and stressors through a cycle of deployment. Effective coping with these unique stressors related to deployment, for both service members and their families, can lead to improved outcomes.

Coping has been the focus of many studies including studies of military service members. There are different types of coping and coping processes described in the literature, and these may vary depending on circumstance and timing (Lazarus, 2000). Riolli and Savicki (2010), in a study of 632 combat participants stationed in Baghdad, found that active coping was more beneficial when it came to dealing with life in the war zone (an appraised stressor that is not in one's control). Further, they concluded that psychological symptoms were reduced in cases in which service members employed coping strategies such as positive reframing, seeking emotional social support, and humor. Some avoidant coping strategies such as behavioral and mental disengagement, venting of strong emotions, denial, and the abuse of substances were not helpful when it came to the reduction of psychological symptoms.

Another study examined changes in avoidant and active coping during PTSD treatment using a military Veteran sample ($n = 636$). In this study, Boden, Miller, Vujanovic, and Drescher (2012),

found that avoidant coping was associated with posttraumatic stress disorder (PTSD) symptom severity, while active coping was associated with fewer PTSD symptoms. And, in another study of 218 National Guard veterans, Rodrigues and Renshaw (2010) found no relation between active coping approaches that alter the environment (called problem-focused coping in their study) and PTSD, while they found an association between avoidant coping and negative PTSD outcomes. Avoidant coping (denial, self-blame, venting, substance abuse) was directly related to severity of both combat exposure and postdeployment PTSD symptoms. None of these three studies included significant others.

There are only a few studies that examined the coping strategies used by significant others of military service members undergoing a deployment. One study showed that significant others who cope well with extended separations and reunions are more likely to support their service members' military careers than those who do not cope as well (Wood, Scarville, & Gravino, 1995). Another study that specifically looked at the coping strategies of military wives (Dimiceli, Steinhardt, & Smith, 2010) found that active coping strategies (acceptance, planning, active coping, religion, and using emotional support) were related to improved health and mental health outcomes. Other ways of coping with deployment related stress such as self-distraction, venting, self-blame, and denial were related to increased symptoms of depression.

Purpose of the Study

The above-mentioned research with military service members shows a clear association between different types of coping and positive or negative outcomes. Avoidant coping for service members is associated with worse mental health such as PTSD. For significant others, doing something active to cope was helpful in dealing with a deployment. Few studies have examined coping in relation to couple outcomes, and the National Guard has had only a limited focus of study when it comes to coping. In addition, most studies assess coping at only one time point.

In the current study (*Risk, Resiliency, and Coping in National Guard Families*), we examine National Guard couples and the relationship between the predeployment coping (active vs. avoidant) of each individual in the relationship with their own postdeployment mental health (anxiety, depression, PTSD) and family well-being (dyadic adjustment and parenting stress), while also exploring how the coping of each person predeployment affects the outcomes of their significant other postdeployment. We asked soldiers and their significant others to fill out a coping measure in response to finding out that the soldier in their family was going to be deployed. Through two time points (pre- and postdeployment), we examined how predeployment coping is associated with postdeployment outcomes.

Our hypotheses are as follows:

- H1: Active coping predeployment for both soldiers and significant others would be associated with significant actor and partner effects for lower postdeployment depression, anxiety, PTSD, dyadic distress, and parenting stress.
- H2: Avoidant coping predeployment for both soldiers and significant others would be associated with significant actor and partner effects for higher postdeployment depression, anxiety, PTSD, dyadic distress, and parenting stress.

Both hypotheses controlled for predeployment levels of depression, anxiety, PTSD, dyadic distress, and parenting stress.

Method

Participants

In the predeployment data collection, there were 393 soldiers and 243 significant others who completed a survey; 62% were between 18 and 30 years of age. Of the soldiers, 97% were male and 99% of the significant others were female. Of the sample, 81% were Caucasian, 6% African American, 4% Hispanic, and the remainder identified with other ethnic groups. Of the

Table 1
Demographic Characteristics of Study Participants

Variable	Predeployment		Postdeployment	
	Soldiers (<i>n</i> =393) <i>n</i> (%)	Significant Others (<i>n</i> =243) <i>n</i> (%)	Soldiers (<i>n</i> =201) <i>n</i> (%)	Significant Others (<i>n</i> =149) <i>n</i> (%)
Age				
18-21	55 (14.0)	44 (18.1)	5 (2.5)	10 (6.7)
22-30	186 (47.3)	109 (44.9)	107 (53.2)	66 (44.2)
31-40	92 (23.4)	58 (23.9)	51 (25.4)	48 (32.2)
41-50	52 (13.2)	28 (11.5)	32 (15.9)	20 (13.4)
51-60+	8 (2.0)	4 (1.6)	6 (3.0)	5 (3.4)
Gender				
Female	13 (3.4)	233 (98.7)	3 (1.5)	142 (100)
Male	373 (96.6)	3 (1.3)	192 (98.5)	0 (0.0)
Race and ethnicity				
African American	25 (6.4)	12 (5.0)	6 (3.0)	4 (2.7)
Caucasian	317 (81.5)	200 (83.3)	170 (84.6)	127 (85.8)
Hispanic	17 (4.4)	7 (2.9)	8 (4.0)	7 (4.7)
Native American	8 (2.1)	4 (1.7)	2 (1.0)	1 (0.7)
Asian American	1 (0.3)	2 (0.8)	0 (0.0)	2 (1.4)
Other	21 (5.4)	15 (6.3)	15 (7.5)	7 (4.7)
Education				
Some high school	3 (0.8)	5 (2.1)	1 (0.5)	3 (2.0)
High school/GED	133 (34.2)	53 (22.0)	67 (33.4)	19 (12.9)
Some college	167 (42.9)	97 (40.2)	75 (37.3)	51 (34.5)
Associate/Technical	33 (8.5)	47 (19.5)	23 (11.4)	41 (27.7)
Bachelor's degree	46 (11.8)	30 (12.4)	26 (12.9)	26 (17.6)
Graduate degree	7 (1.8)	9 (3.7)	9 (4.5)	8 (5.4)
Military rank				
E1-E4	230 (58.5)	N/A	85 (42.3)	N/A
E5-E6	113 (28.8)	N/A	82 (40.8)	N/A
E7-E9	22 (5.6)	N/A	16 (8.0)	N/A
O1-O3	23 (5.9)	N/A	12 (6.0)	N/A
O4-O9	1 (0.3)	N/A	4 (2.0)	N/A
WO1-5	4 (1.0)	N/A	2 (1.0)	N/A
Marital status				
Married	297 (75.6)	184 (76.3)	161 (80.1)	134 (90.5)
Cohabiting	57 (14.5)	32 (13.3)	11 (5.5)	8 (5.4)
Committed relationship	39 (9.9)	20 (8.3)	8 (4.0)	6 (4.1)
Separated/divorced	0 (0.0)	1 (0.4)	7 (3.5)	0 (0.0)
Widowed	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Single	0 (0.0)	2 (0.8)	10 (5.0)	0 (0.0)
Other	0 (0.0)	2 (0.8)	0 (0.0)	0 (0.0)
Family income				
Below \$25,000	112 (28.9)	76 (32.2)	36 (18.3)	31 (21.5)
\$25,001 to \$50,000	155 (40.1)	99 (41.9)	95 (48.2)	64 (44.4)
\$50,001 to \$75,000	64 (16.5)	34 (14.4)	38 (19.3)	27 (18.8)
\$75,001 to \$100,000	35 (9.0)	20 (8.5)	14 (7.1)	13 (9.0)
Over \$100,000	21 (5.4)	7 (3.0)	14 (7.1)	9 (6.3)

^aBecause some respondents did not complete some survey items, numbers do not all add to the sample total

predeployment sample, 14% had a bachelor's degree or higher and 28% of the soldiers and significant others reported annual incomes higher than \$50,000.

In the postdeployment data collection, there were 201 soldiers and 149 significant others who completed a survey; 54% were between 18 and 30 years of age. Of the soldiers, 99% were male and 100% of the significant others were female. Of the sample, 85% were Caucasian, 3% African American, 4% Hispanic, and the remainder identified with other ethnic groups. Of the total postdeployment sample, 20% had a bachelor's degree or higher and 33% of soldiers and 33% of significant others reported annual incomes higher than \$50,000. Demographics are summarized on Table 1.

Measures

Coping. The Brief COPE (Carver, 1997) assesses coping in anticipation of the upcoming deployment. This is a widely used measure comprising 28 items and 14 subscales. Respondents rated their approach to coping with preparation for deployment (e.g., “These questions ask about different ways of coping you may have used since you [your spouse/significant other] found out you were going to be deployed. Please mark which answer best describes you”) on a 4-point Likert scale ranging from 1 (*I haven’t been doing this at all*) to 4 (*I’ve been doing this nearly every day*)

The Brief COPE has been reported to have strong psychometric properties (Boden et al., 2012; Carver, 1997; Cooper, Katona, & Livingston, 2008). For the current study, the Brief COPE was used in identifying two latent factors: active coping and avoidance coping (see the Results section for details).

Dyadic adjustment. The Revised Dyadic Adjustment Scale (RDAS; Busby, Christensen, Crane, & Larson, 1995) is a 14-item measure that assesses dimensions of couple relationships within three global categories: consensus in decision making, values and affection, and satisfaction with the relationship. First, respondents rated their level of agreement on six items that affect relationships (e.g., religious matters, sex relations) on a 6-point Likert scale ranging from 0 (*always agree*) to 5 (*always disagree*). For the next four items, respondents answered relational questions (e.g., “How often do you and your partner quarrel”) on a 6-point Likert scale ranging from 0 (*all the time*) to 5 (*never*). Third, respondents rated one question about relationship engagement and interests (“Do you and your mate engage in outside interests together?”) on a 5-point Likert scale ranging from 0 (*every day*) to 4 (*never*). Finally, respondents rated three questions about events occurring in the relationship (e.g., working together on a project) on a 6-point Likert scale ranging from 0 (*never*) to 5 (*more often*).

A scoring key was used to arrive at a dyadic adjustment score; cutoff scores exist to distinguish between distressed and nondistressed couples, with a score of 47 and below representing distressed and a score of 48 and above representing nondistressed couples (Crane, Middleton, & Bean, 2000). The RDAS has good psychometric properties with a Cronbach’s alpha of .90 (Busby et al., 1995). In the present study, Cronbach’s alphas are .91 (predeployment) and .90 (postdeployment).

Parenting stress. The Parental Stress Scale (PSS; Berry & Jones, 1995) is an 18-item measure that assesses parental stress. The PSS poses questions about an individual’s positive (e.g., emotional benefits, personal development) and negative (e.g., demands on resources, restrictions) experiences as a parent, with higher scores representing higher levels of parenting stress. Respondents either agreed or disagreed with items in relation to their child/ren on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*Strongly Agree*). Positive items are reverse scored and possible scores on the scale can range between 18 and 90. The higher an individual scores on the scale, the greater the amount of parenting stress. The PSS has satisfactory levels of internal reliability (.83; Berry & Jones, 1995). In the present study, Cronbach’s alphas are .89 (predeployment) and .89 (postdeployment).

Depression. The Patient Health Questionnaire (PHQ-9; Kroenke, Spitzer, & Williams, 2001) assesses depressive symptoms in participants. Participants rated nine questions about items of bother over the last 2 weeks (e.g., sleep, life interest, appetite, suicidal thoughts, concentration, and views toward self) on a 4-point Likert scale ranging from 0 (*not at all*) to 3 (*nearly every day*). All boxes on the questionnaire are added according to their value. A total score is acquired ranging from 1 to 27, with scores 1 to 4 indicating minimal depression, 5 to 9 mild depression, 10 to 14 moderate depression, 15 to 19 moderately severe depression, and 20 to 27 severe depression. The PHQ-9 has been reported to have good construct validity and reliability as a measure of depressive symptoms in the general population (Martin, Rief, Klaiberg, & Braehler, 2006). In the present study, Cronbach’s alphas are .91 (predeployment) and .88 (postdeployment).

PTSD. The PTSD Checklist-Military Version (PCL-M) is a commonly used 17-item self-report measure of PTSD symptoms for soldiers and the PTSD Checklist-Civilian Version (PCL-C) for significant others (Weathers, Litz, Herman, Huska, & Keane, 1993). Respondents rated items related to their most distressing military or life event in the past 30 days on a 5-point Likert type scale ranging from 1 (*not at all*) to 5 (*extremely*). The total score on the checklist was used as a continuous measure of PTSD symptom severity and scores above 50 are considered to indicate likely PTSD. The PCL-M and PCL-C have strong psychometric properties, with studies reporting internal consistency scores ranging between .94 and .97 (Blanchard, Jones-Alexander, Buckley, & Forneris, 1996; Weathers et al., 1993). In this particular study, Cronbach's alphas are .95 (predeployment) and .95 (postdeployment).

Anxiety. The Generalized Anxiety Disorder 7 Scale (GAD-7; Spitzer, Kroenke, Williams, & Löwe, 2006) is a seven-item questionnaire that screens for generalized anxiety disorder. Respondents indicated specific problems (feeling nervous, anxious, on edge, or having trouble relaxing) in response to the question, "Over the last 2 weeks, how often have you been bothered by any of the following problems?" Items were rated on a 4-point scale ranging from 0 (*not at all*) to 3 (*nearly every day*). Scores are summed and range from 7 to 21; scores between 5 and 9 indicate mild anxiety, 10 to 14 moderate anxiety, and greater than 15, severe anxiety. The GAD-7 has good psychometric properties, with Cronbach alphas ranging from .86 to .91 (Dear et al., 2011; Spitzer et al., 2006). In the present study, Cronbach's alphas are .92 (predeployment) and .91 (postdeployment).

Procedure

Approval for this study was obtained from the institutional review boards of all study investigators and the USAMRMC Office of Research Protections. This study targeted a large National Guard combat arms battalion that deployed to an active war zone in 2012. Soldiers set to deploy, along with their significant others, were invited to take part in the study while attending a predeployment gathering that took place several months before deployment occurred. All participation was voluntary and there was an emphasis on confidentiality/anonymity. Participants provided no identifying information, but instead generated an identification code based on their responses to the following three questions: What is your mother's maiden name? What was the make of your first car? What is the day of the month you were born? Participants wrote down the first three letters or two numbers of each of these answers, and this was their personal code (Garvey Wilson et al., 2010).

After the deployment was over, approximately 15 months after the predeployment data collection, study personnel invited soldiers and their significant others to complete a second wave (postdeployment survey). Recruitment occurred at a reintegration event, and participation again was voluntary and not connected to the activities of the event. The participants created a self-generated identification code in the same way as the first wave of data collection. Although our efforts were focused on maximizing confidentiality and anonymity, this approach did not come without difficulties. For example, this emphasis created a barrier to knowing the identities of those who participated in each wave of the study, and we were thus unable to provide specific follow-up reminders. Some participants (especially significant others) did not attend both pre- and postdeployment events. Also, some participants changed aspects of their codes that made precise matching a challenge. Because of these difficulties, there was some attrition between study waves. In the predeployment sample, there were 238 matched couples, and in the postdeployment sample, 143 matched couples.

Across both waves, 122 matched couples completed both pre- and postdeployment surveys. Full information maximum likelihood (FIML), the standard estimation method used in structural equation modeling, was used to address missing data. This estimation method has been cited as preferable to listwise deletion because it provides more power and less biased estimates (Enders, 2010). Additionally, this method has been discussed in a recently published review (Lederemann & Kenny, 2017) as a preferable estimation method for working with the actor-partner interdependence model (Kenny, Kashy, & Cook, 2006) in analyzing dyadic data. The use of

FIML allowed for all data to be used in final analysis after an initial missing data analysis (see below) determined that this missingness was at random.

Results

We first conducted a missing data analysis using SPSS. Most missingness was associated with nonresponse for the significant other at predeployment and/or postdeployment, or nonresponse by both members of the dyad at either predeployment or postdeployment; the remaining missingness was associated with nonresponse to a specific measure when other measures were observed. We identified six modal patterns of missingness: soldier and significant other observed at both time points ($n = 122$); soldier and significant other observed at predeployment only ($n = 96$); soldier observed at predeployment only ($n = 91$); significant other not observed at postdeployment ($n = 20$); significant other not observed at predeployment ($n = 21$); and soldier only observed at both time points ($n = 32$).

We ran separate analyses of variance (ANOVAs) predicting each of the 20 measured variables (5 variables X 2 occasions X 2 dyad members) and four sum score approximations of the coping factors (see below; 2 factors X 2 dyad members) by the pattern of missingness. With no adjustment for multiple tests, only soldier's PTSD at predeployment and soldier's predeployment avoidant coping were significantly associated the pattern of missingness ($p = .048$ and $.034$, respectively), but the effect sizes were small ($\eta^2 = .022$ and $.021$) and none of the ANOVAs was statistically significant when adjusting for multiple statistical tests, using a Benjamini-Hochberg procedure (Benjamini & Hochberg, 1995). Thus, we considered the missingness to be missing at random (Little & Rubin, 2002) and used a standard maximum likelihood approach to missingness, which allows all available data to be used in the analyses and leads to greater power and less biased results than classical approaches such as listwise deletion (Enders, 2010).

All further analyses were completed using MPLUS (version 7) with a full information maximum likelihood approach to missing data (Muthén & Muthén, 1998-2012). Additional missing data analyses using demographic data indicated that missingness may have been associated with education or rank. We therefore repeated all analyses treating education and rank as saturated correlates (Graham, 2003). Results were consistent, so we report the simpler results without the saturated correlates included.

The Structure of Coping From the Brief COPE

The first analyses focused on identifying the structure of coping for this population and examining whether the nature of coping is consistent for soldiers and significant others. We first carried out factor and factorial invariance analyses of the Brief COPE. We conducted an exploratory factor analysis with all 28 items on the Brief COPE to determine the best fitting factors to use in our analyses, treating the items as categorical indicators. We used eigenvalues and associated scree plots to determine the number of factors for this study. We conducted two analyses, one for soldier responses and one for significant other responses, and then used principles of factorial invariance to consider whether coping was measured in the same way for both members of the soldier-significant other dyad (Horn & McArdle, 1992).

After these analyses, we concluded that a two-factor solution provided the best description of the Brief COPE for this study. The first factor, avoidant coping, included items from each of the following Brief COPE subscales: Denial, Substance Use, and Behavioral Disengagement. The second factor, active coping, included items from each of the following Brief COPE subscales: Active, Emotional Support, Instrumental Support, Positive Reframing, Planning, Humor, Acceptance, and Religion. After theoretical considerations and discussions among our team, we dropped the humor and religion subscales from the Active factor, because their content, for the purpose of this study, was not theoretically consistent with the other items included in the factor.

We then moved to a confirmatory factor analysis framework, with the 20 items assigned to the two factors identified in the exploratory factor analysis. This two-factor model fit adequately ($\chi^2 = 652$, degree of freedom [df] = 169, root mean square error of approximation [RMSEA] = .085, comparative fit index [CFI] = .959, Tucker-Lewis index [TLI] = .953).

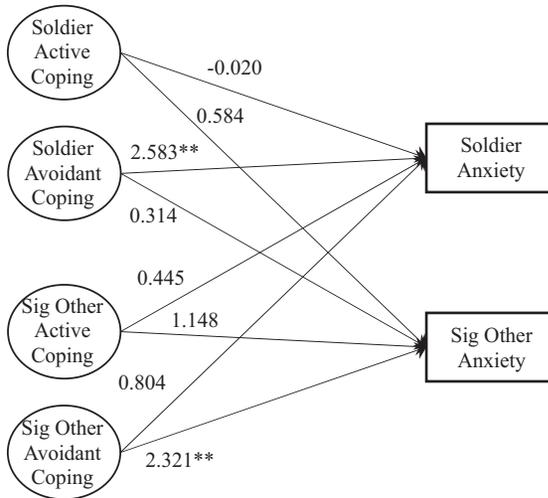


Figure 1. Actor and partner coefficients of active and avoidant predeployment coping predicting soldier and significant other postdeployment anxiety.

Note. Unstandardized path coefficients (for standard errors, see Table 2). Model controls for predeployment anxiety for both soldier and significant other. Specific factor loadings and error terms are omitted for ease of reading.

** $p < .01$. * $p < .05$.

Including residual covariances between pairs of items on the same subscale from the Brief COPE substantially improved fit ($\Delta\chi^2 = 330$, $\Delta df = 9$, $p < .01$, $RMSEA = .051$, $CFI = .986$, $TLI = .984$). We therefore included residual covariances in further analyses. We repeated these analyses for the significant others. Results were similar, yielding a model with the same factor structure that fit well ($RMSEA = .063$, $CFI = .965$, $TLI = .959$). Finally, examining factorial invariance yielded very good fit for strong metric invariance between soldiers and significant others ($RMSEA = .049$, $CFI = .940$, $TLI = .941$). Based on these analyses, we concluded that two factors, Active and Avoidant Coping, were measured in the same way (i.e., with the same unit and origin), for both soldiers and significant others.

Results for the Two Hypotheses

To examine the two focal hypotheses, we used a cross-lagged regression approach separately for each outcome variable (e.g., depression). In each analysis, the level of the outcome variable at postdeployment for both the soldier and the significant other were regressed on predeployment coping factors for both members of the dyad, controlling for predeployment values of the outcome variable. This model is a form of the actor-partner interdependence model (Kenny et al., 2006) that allowed us to predict outcomes from the latent constructs of Active and Avoidant coping. The model for the outcome variables is illustrated in figures 1–5; results for each of the five separate analyses are summarized in Table 2. The observed means and standard deviations of outcome variable total scores for study participants at pre- and postdeployment are summarized in Table 3.

Active coping. For the first hypothesis, we expected that there would be significant and positive actor and partner effects for active coping. Results indicated that for both soldiers and significant others, there was no significant actor effect of active coping on any of the outcome variables. Meaning, one's active coping predeployment was not significantly associated with one's own mental health outcomes, dyadic adjustment, or parenting stress postdeployment while controlling for one's predeployment levels of depression, anxiety, PTSD, dyadic adjustment, and parenting stress. Further, there were no significant partner effects between active coping and the outcome scores. Specifically, there were no significant associations between an individual's

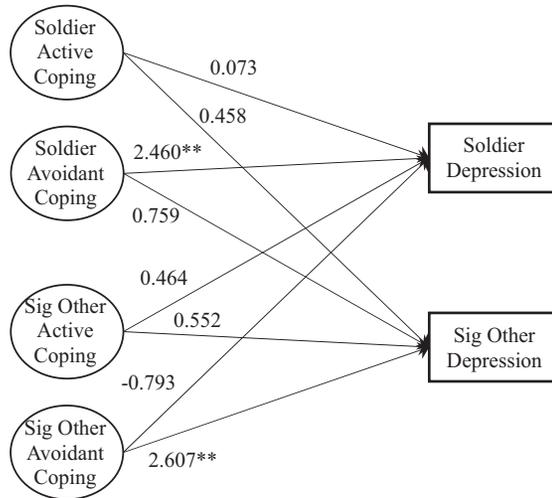


Figure 2. Actor and partner coefficients of active and avoidant predeployment coping predicting soldier and significant other postdeployment depression.
 Note. Unstandardized path coefficients (for standard errors, see Table 2). Model controls for predeployment depression for both soldier and significant other. Specific factor loadings and error terms are omitted for ease of reading.
 **p < .01. *p < .05.

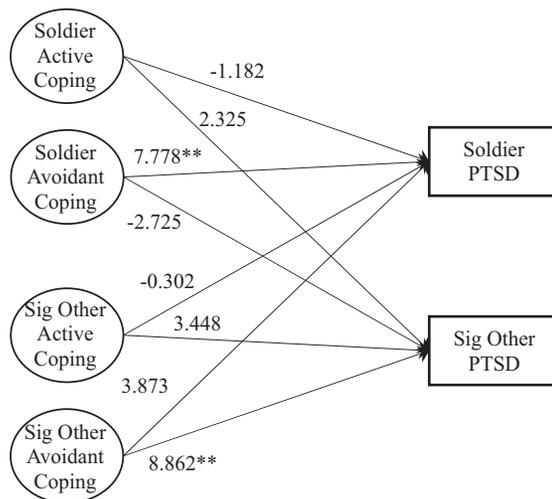


Figure 3. Actor and Partner coefficients of active and avoidant predeployment coping predicting soldier and significant other postdeployment PTSD.
 Note. Unstandardized path coefficients (for standard errors, see Table 2). Model controls for predeployment PTSD for both soldier and significant other. Specific factor loadings and error terms are omitted for ease of reading.
 **p < .01. *p < .05.

active coping and his/her significant other’s depression, PTSD, anxiety, parenting stress, or dyadic distress while controlling for predeployment levels of the same outcome variables.

Avoidant coping

For the second hypothesis, we expected that those who used avoidant coping predeployment, as they faced the stressors leading up to the deployment, would experience negative actor

Table 2
Unstandardized Actor-Partner Effects of Soldier and Significant Other Predeployment Coping Predicting Mental/Family Health Outcomes Postdeployment

Variables	Soldier mental health		Significant other mental health	
	b	SE	b	SE
Anxiety				
Actor Active	-0.020	0.507	1.148	0.751
Actor Avoidant	2.583**	0.525	2.321**	0.879
Partner Active	0.445	0.668	0.584	0.734
Partner Avoidant	0.804	0.754	0.314	0.774
Depression				
Actor Active	0.073	0.532	0.552	0.721
Actor Avoidant	2.460**	0.548	2.607**	0.858
Partner Active	0.464	0.689	0.458	0.724
Partner Avoidant	-0.793	0.814	0.759	0.721
PTSD				
Actor Active	-1.182	1.828	3.448	2.066
Actor Avoidant	7.778**	1.897	8.862**	2.525
Partner Active	-0.302	2.150	2.325	2.179
Partner Avoidant	3.873	2.346	-2.725	2.846
<hr/>				
	Soldier family well-being		Significant other family well-being	
Dyadic adjustment				
Actor Active	-0.348	1.316	1.559	1.245
Actor Avoidant	-2.700	1.476	-3.509*	1.575
Partner Active	-1.329	1.545	-0.917	1.218
Partner Avoidant	-1.659	2.042	0.741	1.510
Parenting stress				
Actor Active	-0.730	1.638	-0.503	1.633
Actor Avoidant	3.459*	1.691	-2.739	1.903
Partner Active	2.218	1.861	-0.569	1.606
Partner Avoidant	6.680**	2.459	3.448	1.955

Note. PTSD = posttraumatic stress disorder; SE = standard error; actor active = actor active coping; actor avoidant = actor avoidant coping; partner active = partner active coping; partner avoidant = partner avoidant coping; analyses controlled for predeployment mental health.

* $p < .01$. ** $p < .05$.

Table 3
Observed Means and Standard Deviations of Outcome Variable Total Scores of Study Participants at Predeployment and Postdeployment

Variable	Predeployment		Postdeployment	
	Soldiers ($n=393$) μ (SD)	Significant others ($n=243$) μ (SD)	Soldiers ($n=201$) μ (SD)	Significant others ($n=149$) μ (SD)
Mental health				
Anxiety	3.19 (4.38)	5.52 (5.23)	4.00 (4.80)	5.30 (5.17)
Depression	3.62 (4.84)	4.89 (4.92)	3.91 (4.43)	5.32 (5.14)
PTSD	29.08 (14.76)	30.00 (14.70)	31.13 (15.39)	30.79 (14.55)
Family well-being				
Dyadic adjustment	49.51 (11.29)	51.91 (9.18)	50.93 (1.5)	51.24 (8.53)
Parenting stress	35.77 (10.89)	31.82 (9.97)	36.35 (10.81)	33.16 (9.14)

Note. PTSD = posttraumatic stress disorder; SD = standard deviation.

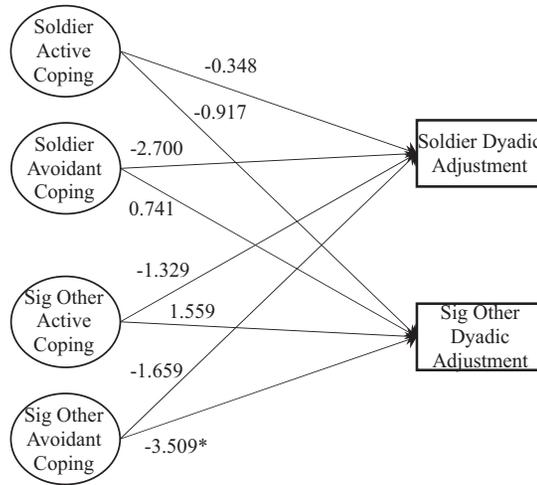


Figure 4. Actor and partner coefficients of active and avoidant predeployment coping predicting soldier and significant other postdeployment dyadic adjustment.

Note. Unstandardized path coefficients (for standard errors, see Table 2). Model controls for predeployment dyadic adjustment for both soldier and significant other. Specific factor loadings and error terms are omitted for ease of reading.

** p < .01. * p < .05.

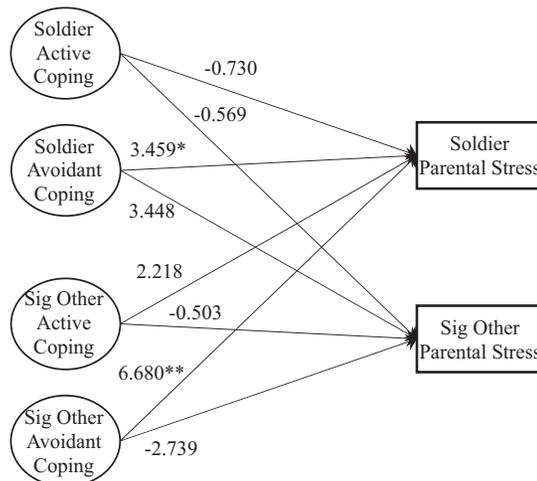


Figure 5. Actor and partner coefficients of active and avoidant predeployment coping predicting soldier and significant other postdeployment parental stress.

Note. Unstandardized path coefficients (for standard errors, see Table 2). Model controls for predeployment parental stress for both soldier and significant other. Specific factor loadings and error terms are omitted for ease of reading.

** p < .01. * p < .05.

effects for mental health, dyadic adjustment, and parenting stress outcomes postdeployment. This hypothesis was supported for actor effects in relation to all mental health outcomes. Specifically, higher levels of avoidant coping were significantly associated with higher levels of postdeployment anxiety for both soldier ($\beta = 0.44$, $p < .01$) and significant other ($\beta = 0.32$, $p < .01$), higher levels of postdeployment depression for both soldier ($\beta = 0.45$, $p < .01$) and significant other ($\beta = 0.36$, $p < .01$), and higher levels of postdeployment PTSD for both soldier ($\beta = 0.41$, $p < .01$) and significant other ($\beta = 0.43$, $p < .01$).

In addition, soldier avoidant coping was associated with increased soldier parenting stress ($\beta = 0.26, p < .05$), while significant other avoidant coping was associated with increased significant other dyadic distress ($\beta = -0.29, p < .05$). It is important to keep in mind that lower scores on the RDAS equal greater dyadic distress, hence the negative effect size for the RDAS score. We also expected that individuals would be negatively affected postdeployment when their significant other (soldiers or significant other) used avoidant coping predeployment. This hypothesis was supported only for soldier parenting stress; higher significant other avoidant coping predeployment was associated with higher soldier parenting stress postdeployment ($\beta = 0.43, p < .01$). No other significant partner effects were found (see Table 2 for unstandardized coefficients).

Discussion

In this study, we examined the relationship between predeployment coping and postdeployment mental health/family outcomes for National Guard soldiers and their significant others. We were interested in the effects of predeployment active and avoidant coping on postdeployment depression, PTSD, anxiety, dyadic adjustment, and parenting distress while controlling for the predeployment levels of these outcomes in the analyses. The study has several interesting findings. First, it is of note that both soldiers' and significant others' active coping predeployment did not affect their own or their significant others' mental or family well-being outcomes while controlling for predeployment levels of mental health and family well-being, and that our missing data analyses indicated that this finding was not due to differential attrition. While we expected that a proactive approach to coping with deployment difficulties would have positive effects, this was not supported by the data. This may be because military personnel preparing for deployment are already taking many actions to get their lives in order as they face a deployment.

In contrast, an individual's avoidant coping for both soldiers and significant others predeployment was associated with worse mental health outcomes (actor effects), including increased anxiety, PTSD, and depressive symptoms at postdeployment. Also, avoidant coping among both soldiers and significant others was associated with increased soldier parenting stress but not higher significant other parenting stress. Only spousal avoidant coping was associated with spousal dyadic adjustment. These findings suggest that avoidant coping, which was characterized by denial, substance use, and behavioral disengagement, is not an effective strategy to use while facing a deployment and has negative associations with mental health and family well-being for both soldiers and significant others.

We were surprised that there were minimal partner effects; that is, for most, coping approaches used by one individual were unrelated to mental health and family well-being outcomes in the significant other. The only partner effect of note was when significant others engaged in avoidant coping predeployment. In these cases, soldiers had higher parenting stress postdeployment. This finding suggests systemic effects between a significant other's predeployment coping and a soldier's stress at postdeployment. While we cannot be certain why this is the case, it may be that when a significant other is avoidant, she/he is more disengaged, in denial, and using substances to cope with the deployment. As a result, home life is likely more chaotic when the soldier returns home leading him/her to step into a less organized family environment (especially compared to the military) with children not used to consistent routines and rules. This stress likely reflects a soldier struggling to fit back into family life postdeployment, with a significant other who is disengaged. These findings represent the complex interactions of couples within the stressors of the deployment cycle. Reintegration is a difficult process requiring a change in roles and functions (Pincus et al., 2001), and these findings indicate a systemic/interactional aspect to coping with stress in a family context.

Limitations

This study is limited in several ways. First, the study participants were recruited from only one state in the United States. Second, on one hand, while a strength of the study is its focus on a reserve population (i.e., the National Guard), this is also a limitation to the generalizability

of study findings beyond a National Guard population. Third, the time of assessments of participants occurred when it was possible for the study team to gain access to the population. As a result, the postdeployment assessment occurred shortly after the deployment ended, and outcomes may improve or worsen with time.

In addition, not everyone who attended the predeployment event also attended the postdeployment event, which resulted in attrition due to the anonymous nature of study collection. Those who did not attend the second event were not able to participate in the second round of data collection. Finally, in an ideal world, we aimed to have few problems using codes to protect anonymity of study participants. We used self-generated codes as a way to emphasize study anonymity. While these worked well in some cases, in others participants changed their codes, wrote in ways that were not understandable, or left the code blank. This made matching across waves a challenge.

Implications for Future Research

Interventions are increasingly needed for families who negotiate a deployment. These study findings suggest that soldiers and significant others going through a deployment need to engage less in avoidant coping strategies. These findings support the work of Boden and colleagues (2012) who studied coping and PTSD in veterans, concluding that increases in avoidant coping were related to increased PTSD. This study expands the work of Boden, by expanding the conclusions to other mental health conditions (depression, anxiety) and family well-being (dyadic distress, parenting distress) and by including coping of significant others. For soldiers and significant others facing deployment, avoidant coping results in negative effects, that is, more anxiety, PTSD, and depression postdeployment and increases in some family difficulties.

A clear implication of this study is that avoidant coping before deployment, regardless of how that may change during deployment, is a strong predictor of negative outcomes. Individuals (both soldiers and significant others) preparing to deploy, who engage in avoidant coping behaviors, can be assisted in navigating the deployment process more positively by working through their emotions related to the deployment and reducing negative behaviors such as denial and high substance use. This study's findings strongly suggest that if individuals are not able to cease coping in this way, they run the risk of difficulties postdeployment. Military personnel may also consider whether individuals who engage in extreme forms of avoidant coping are even suitable to deploy.

Consideration should also be given to how these coping strategies play out systemically in relationships with regard to parenting; an avoidant way of coping with deployment by the significant other can inadvertently create more parenting stress in the long run for the soldier. An avoidant way of coping likely would result in a home environment that was more chaotic with children having less routines and structures. We would expect this to create a more stressful parenting situation for soldiers. In couples with children in which significant others engage in avoidant coping may require extra help with parenting strategies from skilled facilitators, to help during the reintegration process. Predeployment couple coaching may be extremely useful to help couples become more in sync with how not to cope with parenting through a stressful time apart.

Conclusion

Longitudinal data over years will clarify coping over time. More nuanced measures of coping, especially the role of active coping, will assist in understanding ways to deal with stressful events such as a deployment. More study is needed on the ways in which different coping styles of intimate significant others affect family functioning over the course of a deployment. Studies that include a national sample of National Guard members and members from other branches of the military will assist in generalizing findings to all military.

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