Deployment Stressors, Coping, and

Psychological Well-Being Among Peacekeepers

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1. Abstract

In this study, we assess the relations among deployment stressors, coping responses, and psychological well-being among 219 Canadian soldiers after returning home from a peacekeeping deployment. We found that coping responses are at least as important as the objective experiences in determining psychological adjustment among peacekeepers. Specifically, those soldiers who engaged in rational coping (the use of specific strategies to solve a problem) had fewer symptoms of posttraumatic stress than those who did not. Conversely, those soldiers that use avoidance or substance abuse as forms of coping had an increased likelihood of posttraumatic symptoms relative to those not using these coping responses. We suggest that training soldiers to use more adaptive coping strategies such as problem solving, and discouraging the use maladaptive strategies such as abusing alcohol, could decrease the likelihood of negative psychological sequelae pursuant to peacekeeping deployments.

2. Introduction

In the line of duty, Peacekeepers are exposed to a variety of potentially traumatizing events. For example, Peacekeepers may witness large-scale human death and suffering, widespread physical devastation, and may be themselves the targets of violence. These experiences may increase the likelihood of psychological problems among peace support

personnel. For example, a large number of peacekeepers suffer from clinically significant post-deployment psychiatric problems such as posttraumatic stress disorder (i.e., PTSD) and depression.

The predominant understanding of how traumatizing experiences impact on psychological well-being emphasizes the mediating role of coping responses. That is, it is not the events that directly result in negative psychological outcomes but rather how individuals cope with the events. Generally, coping is understood to include cognitive and behavioural efforts to manage events that are interpreted as threatening to the individual's welfare. Although the specific dimensions used to categorize coping responses vary somewhat, the types of coping responses include problem focused, emotion focused, and/or avoidance. Problem focused coping includes the use of specific strategies to solve a problem or deal with an issue. Emotion focused coping involves strategies to manage or reduce the emotional distress associated with a traumatizing event (e.g., letting emotions out, "blowing off steam"). Finally, avoidance coping refers to behaviours aimed at denial of, or distraction from, the traumatizing events or suppressing the emotions associated with the event (e.g., consuming alcohol, pretending that event did not really happen, focusing on other unrelated matters).

The military literature in this area has produced inconsistent results regarding the extent to which individual differences in coping strategies buffer the impact of traumatic military. It may be that in some military contexts, certain events are so extreme and taxing in nature, that coping attempts may have more limited protective value. For example, Canadian peacekeepers in Rwanda and Bosnia witnessed the massacre of women and children. In one study, Card (1987) reported that exposure to combat events was more strongly related with later PTSD than individual background variables. Other work has shown that both traumatic events and MMPI

scores measured at age 15 predicted subsequent PTSD in Vietnam veterans (Schnurr, 1993).

Another prospective study of Dutch peacekeepers assessed the independent contributions of

personality dispositions and exposure to traumatic events on psychological well-being (Bramsen,

Dirkzwager, and van der Ploeg, 2000). Consistent with the results of Card, exposure to

traumatic deployment events was the most significant predictor of PTSD severity. Personality

factors and age were also implicated, but were less predictive of post-deployment PTSD

symptom severity than were the stressful events themselves.

One way to explore the contribution of events and coping responses to psychological

well-being is to assess the relation between stressful events and psychological well-being

independently of the buffering effect of coping responses. Thus, we first explore the

contributions of stressful experiences to post-deployment psychological well-being.

Specifically, we explore the unique contributions of stressful deployment events, as well as

previous stressful life events, on the psychological well-being of sample of Canadian

peacekeepers. We then conduct a second analysis to determine whether individual differences in

coping responses moderate the effects of stressful events upon psychological well being. That is,

do stressful events continue to be associated with well-being, after the effects of coping

responses are partialled out? Moreover, we explore this relation using two separate measures of

psychological well-being as criterion variables: Post-traumatic Stress Disorder and via the

SIGNS scale which measures more diffuse symptoms of generalized anxiety, depression, and

somatic complaints.

3. Method

Participants

Participants were 219 peacekeepers actively deployed in Bosnia-Herzegovina, with a

mean age of 28 years (SD = 4.8), a mean of 7.8 years (SD = 4.1) of service experience, and a mean of 8.6 years (SD = 4.8) of formal education. Other demographic characteristics of this sample, collected as categorical data, are listed in Table 1.

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Each participants was administered a package of questionnaires in the context of the Human Dimensions of Operations (HDO) project to quantify the sources, correlates, and consequences of operational stress among Canadian Forces (CF) personnel. Participants completed the HDO questionnaire during the last two months of a peacekeeping deployment in MND(SW) Bosnia-Herzegovina.

Measures

The HDO questionnaire was designed to reflect the important issues and psychological dimensions relevant to peace support operations, and includes a number of measures of individual-level and unit-level well-being. To assess the hypotheses in this research, analyses were conducted using responses on four of the measures included in the HDO questionnaire.

Experience of Major Stress Scale (EMS). The EMS is a 30-item checklist of tragic or life-threatening events, designed to assess both current deployment events (15 items) as well as events that occurred prior to the current deployment (15 items). All of the participants in this study reported experiencing at least one deployment and one pre-deployment tragic or life-threatening event. The number of deployments events reported was summed to generate a deployment stress index, and the number of pre-deployment events was summed to generate a pre-deployment stress index, for each participant. The items for each of the subscales of the EMS are listed in Table 2.

Mississippi Scale for Combat Related PTSD (Mississippi). In its original version, the

Mississippi scale contained 35 items assessing the PTSD symptom dimensions outlined in the

Diagnostic and Statistical Manual of Mental Disorders (DSM-III; American Psychiatric

Association, 1980; Keane, Caddell, & Taylor, 1988). Responses are provided on a 5-point scale

and summed to generate continuous measures of PTSD symptomatology along several

dimensions. More recently, however, abbreviated versions of the Mississippi scale have been

developed having the same precision of measurement as the full scale (King, King, Fairbank,

Schlenger, & Surface, 1993).

Participants in the current study completed a 10-item short-form of the Mississippi scale

developed by Hyer, Davis, Boudewyns, and Woods (1991). Hyer et al. assessed the

psychometric properties of their 10-item scale among a sample of 95 veterans admitted to a

treatment program for PTSD. The analyses by Hyer et al. revealed a .95 correlation with the full

scale, an internal consistency (i.e., Cronbach's alpha) of .85, and a test-retest reliability of .66. In

the current study, participants' responses on the 10-item scale were summed to generated an

overall score of PTSD symptomatology.

Cope Inventory. The Cope inventory assesses the specific cognitive and behavioral

strategies used by people in response to stressful events (Carver, Scheier, & Weintraub, 1989).

Responses are provided on a 4-point scale (i.e., 1 = "I usually don't do this at all", 2 = "I usually

do this a little bit", 3 = "I usually do this a medium amount", and 4 = "I usually do this a lot").

Each participant in this study completed a 30-item revised version of the Cope inventory (Safdar,

1999). The specific coping style dimensions used in this research were based upon previous

psychometric work of the original COPE scale (Lyne and Roger, 2000). Accordingly, each

participant obtained scores on a rational coping scale (12 items), an emotion coping scale (5

items), and an avoidance coping scale (5 items). In addition, each participant also received a

score based on their responses to four new items taping the use of drugs to cope with psychological distress.

Signs Profile. Participants also completed the 21 items of the Signs profile (Dobreva-Martinova, 1998), based on the Hopkins Symptom Checklist (Derogitis, Lipman, Rickels, Uhlenhuth, & Covi, 1974) and on Barton, Ursano, Wright, & Ingraham's (1989) Symptom Checklist, to measures four aspects of well-being: depression-withdrawal (5 items); hyper-alertness (6 items); generalized Anxiety (5 items); and somatic complaints (5 items). Participant's responded to each item on a four point scale (i.e., 1 = never, 2 = sometimes, 3 = often, and 4 = very often). Participants' responses to each of the 21 items were summed to generate an overall score of psychological well-being.

Procedure

Canadian Forces (CF) personnel deployed on a peacekeeping mission in Bosnia completed the measures in a training building located on a CF base in-theatre. The Personnel Selection Officer who was deployed with the unit to Bosnia solicited respondent participation and conducted questionnaire administration in small groups. The questionnaires, however, were completed individually. French and English versions of the deployment questionnaire were made available to respondents.

Participants were told that the survey would help with understanding the human aspects of military operations, enhance the effectiveness of future operations, and help the CF better respond to the needs of members and their families. Respondents were also assured that only research personnel would have access to the data, and that only group results would be reported. Participation was voluntary and anonymous.

4. Results

<u>Descriptive Statistics</u>

Means, standard deviations, and bivariate correlations among the criteria and predictor variables are presented in Table 3. As can be seen, CF members in this deployment experienced relatively few stressors compared to those they experienced before the deployment. Their scores on the PTSD and Signs scales also were low. Finally, coping by increased emotion, avoidance, and substance were relatively low, especially when compared to the use of rational coping strategies. The correlation coefficients revealed relatively low associations between the two criteria of psychological well-being, as well as between the two stress measures. The strongest correlations were among the avoidance and substance use coping scales.

<u>Do stressful events predict psychological well-being?</u>

The first regression analysis explored the unique associations between the two stressors and PTSD. The analysis revealed that the stressors predicted a significant amount of variability in PTSD scores, $F(2,216) = 3.47$, $p < .03$ (Adjusted $R^2 = .022$). An examination of the standardized Beta values revealed that only stress experienced during the current deployment was a significant predictor (Beta = -0.17, $t = -2.48$, $p < .01$). In general, the more stressors participants reported, the lower their scores on the PTSD scale. The findings were different for our second measure of psychological well-being. The second regression equation revealed that neither stressors before deployment nor stressors during deployment were associated with scores on the Signs, $F(2,216) = 0.02$, $p > .05$ (Adjusted $R^2 = 0.000$).

<u>Do stressful events predict psychological well-being after controlling for coping responses?</u>

To answer this question, we performed two hierarchical multiple regression analyses in which the four coping scales were entered in Step 1, and the two stress measures were entered in Step 2. In the first regression, the outcome was PTSD symptomatology, while in the second set

of analyses the outcome was the Signs scale.

With respect to PTSD, the four coping scales accounted for a significant amount of variance in PTSD scores, $F(4,214) = 9.99$, $p < .0001$ (Adjusted $R^2 = .142$). Examination of the standardized Betas showed that three of the four coping scales were significant predictors (see Table 4). Rational coping was negatively associated with PTSD symptoms, suggesting that those who engaged in this type of strategy had fewer PTSD symptoms than those who did not. Avoidance coping and substance abuse were positively associated with PTSD, meaning that as the use of these coping strategies increased, so did PTSD symptoms. When pre-deployment stressors, as well as those experienced during the deployment were entered into the equation in Step 2, they did not account for a significant amount of variance in the criterion $F_{Change}(2,212) = 2.80$, $p > .05$ (Adjusted $R^2 = .156$).

In the second regression using the Signs scores as the outcome measure, the four coping scales, entered as a group on the first step of the regression equation, predicted psychological distress $F(4,214) = 8.27$, $p < .0001$ (Adjusted $R^2 = .118$). Table 4 reports the significance of the standardized Betas for each of the coping scales. In this case, only the avoidance coping scale significantly predicted Signs scores: higher avoidance coping was associated with higher levels of psychological distress. The stress measures did not account for a significant amount of variance in Signs scores, after the effects of coping style were accounted for, $F_{Change}(2,212) = 0.30$, $p > .05$ (Adjusted $R^2 = .112$).

5. Discussion

Our objective in this research was to explore the contribution of events and coping responses to psychological well-being among a sample of Canadian Forces peacekeepers. Specifically, we first explored the unique contributions of stressful deployment events, as well as

previous stressful life events, to psychological well-being. In a second analysis, we examined

whether stressful events continue to be associated with well-being after the effects of coping

responses are partialled out.

Our findings revealed that deployment events, but not events occurring before the

deployment, were related to self-reports of PTSD symptoms. However, the direction of the

effects of deployment events on PTSD scores was unexpected in that greater numbers of

deployment events were associated <u>lower</u> reports of PTSD symptoms. It is important to note

that, although statistically significant, the magnitude of this finding is extremely low, accounting

for only 2 percent of the variance in self-reports of PTSD symptoms. Neither deployment events

nor events before the deployment predicted responses on the Signs scale. One limitation of this

research is the checklist format used for assessing traumatic events. This format does not assess

the effects of accumulated distress that occurs when events are experienced more than once.

Turning our attention to the impact of coping styles on psychological well-being, our

analyses revealed that coping styles are not equally adaptive. Rational coping was negatively

associated with PTSD symptoms, suggesting that those who engaged in this type of strategy had

fewer PTSD symptoms than those who did not. Conversely, both avoidance coping and

substance abuse were positively associated with PTSD, meaning that as the use of these coping

strategies increased, so did PTSD symptoms. With respect to our second measure of

psychological well-being, coping styles continued to be related to psychological outcomes. In

this case, however, only the use of avoidance coping strategies was associated with higher levels

of psychological distress.

In sum, the current findings are consistent with previous reports that coping responses are

at least as important as the objective experiences in determining psychological adjustment among

peacekeepers. This finding may have implications for military training. Presumably, training soldiers to use more adaptive coping strategies such as problem solving, and discouraging the use maladaptive strategies such as abusing alcohol, could decrease the likelihood of negative psychological sequelae pursuant to peacekeeping deployments.

6. **References**

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Table 1

Demographic characteristics of participants.

VARIABLE		N	%
Gender	male	206	94.1
	female	12	5.5
	missing data	1	.5
Marital Status	married/partner	122	55.7
	single	81	37
	separated	12	5.5
	other	4	1.8
Dependants	none	132	60.3
	1 – 2	72	32.9
	3 - 4	10	4.6
	5 - 6	2	.9
	missing data	3	1.4
Previous Tours	none	79	36.1
	1	71	32.4
	2	45	20.5
	3	17	7.8
	4	6	2.7
	5 or more	1	.5
Military Status	regular	176	80.4
	reserve	14	6.4
	augmentee	26	11.9
	missing data	3	1.4
Rank	private	162	74
	master corporal	53	24.2
	missing data	4	1.8

Table 2.

Items of the Experience of Major Stress Scale.

Item	During the Current Deployment	Prior to the Current Deployment
1	Combat	A natural disaster
2	Witnessing abusive violence	A man-mad disaster
3	You harming a person	Witnessing abusive violence
4	Seeing a colleague die	A fatal or serious accident
5	Seeing a person die	Seeing a friend killed
6	Seeing serious injuries	Seeing a person die
7	Seeing widespread destruction	Seeing serious injuries
8	Seeing widespread suffering	Seeing widespread destruction
9	Being threatened with death	Seeing widespread suffering
10	Being held hostage/captive	Being threatened with death
11	Being physically assaulted	Being physically assaulted
12	Being sexually assaulted	Being sexually assaulted
13	Being threatened with assault	Being threatened with assault
14	Being seriously injured	Being seriously injured
15	Dangerous training incidents	Dangerous civilian workplace incidents

Table 3

Means, standard deviations, and bivariate intercorrelations among predictor and criterion variables.

	M	*SD*	Signs	StressB	StressD	Rational	Emotion	Avoid	Substance
					Bivariate Intercorrelations				
PTSD	15.33	4.30	.30***	.06	-.15*	-.20**	-.06	.28***	.32***
Signs	7.27	7.54	--	.01	.01	-.08	.14*	.32***	.09
StressB	3.31	2.51		--	.16*	.10	-.01	.06	.07
StressD	0.85	1.09			--	.10	.03	-.08	.02
Rational	32.96	8.40				--	.29***	-.03	-.04
Emotion	9.83	3.31					--	.20**	.16*
Avoid	7.45	2.52						--	.56***
Substance	4.79	1.71							--

Notes: PTSD = posttraumatic stress disorder; Signs = signs scale; StressB = stress before deployment; StressD = stress during deployment; Rational = rational coping; Emotion = emotion-focused coping; Avoid = avoidance coping; Substance = coping via substance use. * $p <$ .05 ** $p <$ .01 *** $p <$ .001

Table 4

Results of 2-step regression analyses predicting PTSD and Signs scores.

	Beta	T
Step 1: PTSD		
Rational	-.163	-2.47**
Emotion	-.082	-1.21
Avoid	.153	2.01*
Substance	.241	3.17**
Step 2: PTSD		
StressB	.074	1.16
StressD	-.141	-2.22*
Step 1: Signs		
Rational	-.109	-1.63
Emotion	.118	1.73
Avoid	.376	4.85***
Substance	-.139	-1.81
Step 2: Signs		
StressB	.005	.08
StressD	.049	.75

Notes: PTSD = posttraumatic stress disorder; Signs = signs scale; StressB = stress before deployment; StressD = stress during deployment; Rational = rational coping; Emotion = emotion-focused coping; Avoid = avoidance coping; Substance = coping via substance use. * $p < .05$ ** $p < .01$ *** $p < .001$