# Hardiness and Psychological Distress in a Cohort of Police Officers

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Abstract: Since police officers are frequently exposed to high stress situations, individual differences in the response to stress and trauma are of interest. We examined the association of hardiness components (commitment, control and challenge) with depression, posttraumatic stress disorder (PTSD) symptoms, and symptoms of general psychological distress in police officers. The random sample included 105 officers (40 women and 65 men) from the Buffalo Cardio-Metabolic Police Stress (BCOPS) study baseline visit. Components of hardiness were measured using a 15-item hardiness scale. Depressive symptoms were measured using the Center for Epidemiological Studies Depression scale (CES-D), PTSD symptoms were measured using the impact of events scale (IES), and symptoms of general psychological distress were measured using the Brief Symptoms Inventory (BSI). Associations were assessed using linear regression analysis. Models were adjusted for age, education and marital status. Because of significant gender interactions, analyses were stratified by gender. The hardiness control dimension was significantly and negatively associated with CES-D for both genders but was not associated with IES. Hardiness commitment was significantly and negatively associated with both CES-D and IES in women. Men had negative but non-significant associations for commitment with CES-D and IES. Hardiness commitment was negatively associated with the overall BSI score for both men and women but the association was only significant for men, though the strength of the association was stronger for women. This is likely a result of the impact of the smaller sample size for women. The magnitude of gender differences in these associations shows that for depressive and PTSD symptoms, the commitment dimension of hardiness may be more protective in female police officers than in male officers. [International Journal of Emergency Mental Health, 2008, 10(2), pp. 137-148].

Key words: Stress, depression, PTSD, hardiness, police

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Resiliency is often used to imply an ability to "bounce back." Being able to bounce back is an important capability in situations that are difficult and stressful. Paton, Violanti, and Smith (2003) refer to resiliency as the capacity of individuals to draw upon resources and competencies to cope with, adapt to, and develop from the demands, challenges, and changes encountered during and after a critical incident, mass emergency or disaster. The concept of resiliency has been operationalized and studied in depth as hardiness (Maddi, 2005).

# Hardiness as Resiliency

Hardiness refers to a personality trait that indicates the manner in which a person might interpret a critical incident, life stress, or traumatic event. Hardiness is thought to consist of three sets of cognitive style (Maddi, 1990). Commitment reflects the tendency to find meaning and purpose in potentially stressful events; control refers to the tendency to believe that one is capable of managing the stressful event; and challenge is the tendency to see stressful events as an opportunity for personal growth. Thus, more hardy individuals are thought to be more resilient to stressors because they tend to see meaning in their lives, feel in control of these events, and seek challenging environments over safety and security. Evidence exists that factors such as hardiness, emotional stability, self-awareness, tolerance for ambiguity, and self-efficacy can enhance resilience (Flin, 1996; Linley & Joseph, 2004; MacLeod & Paton, 1999; Paton, Violanti, & Smith, 2003).

### The Police and Hardiness

Police officers are regularly exposed to critical incidents (emergencies and disasters). While this type of exposure is often viewed as a precursor to the development of posttraumatic stress disorder (PTSD) and depression, evidence indicates that positive outcomes occur as well, and that most officers do not develop psychological anomalies (Paton et al., 2003; Moran & Colless, 1995). Positive outcomes include exercising professional skills to achieve highly meaningful outcomes, posttraumatic growth, enhanced professional capability, a greater appreciation for family, and an enhanced sense of control over significant adverse events.

Evidence suggests that positive outcomes occur when police officers use psychological competencies such as hardiness to allow themselves to render traumatic or stressful events coherent, manageable, and meaningful (Antonovsky, 1990). In police work, traumatic work incidents may create a sense of psychological disequilibrium that represents that period when the existing interpretive framework that guides the officer's expectations and actions has lost the capacity to make sense of traumatic experiences. (Janoff-Bulman, 1992; Paton, 1994).

Hardiness has been identified as a protective factor that reduces the probability of pathogenic traumatic and psychological reactions (Frederickson et al., 2003; Paton, 1994; 2006). Thus, the objective of the present study is to examine hardiness in police officers and its associations with PTSD, depression, and psychological distress. It is hypothesized that officers higher in hardiness will be more resistant to increased levels of PTSD symptoms, depression, and psychological distress

### **METHODS**

# **Study Population**

The data for this study was collected by the Center for Preventive Medicine at the State University of New York, Buffalo, New York during 1999 and 2000. The study population was made up of 115 randomly selected police officers from the Buffalo, New York police department. Of these, a total of 105 (40 women and 65 men) had complete data on the psychosocial variables of interest in this study. This study was cross-sectional and included self-report measures of hardiness, the impact of events (IES) scale, depressive symptoms (CES-D), and the brief symptoms inventory (BSI).

### **Study Measures**

Hardiness

Hardiness was measured using the 15-item scale developed by Bartone (1995) consisting of three dimensions including control, commitment, and challenge. For this instrument participants respond on a 4-point scale indicating the level at which each of 15 statements apply to them as follows: 0 (not at all true); 1 (a little true); 2 (quite true); 3 (completely true). Scores are obtained by reverse coding the appropriate items and summing items for each dimension. The overall hardiness score is obtained by summing all 15 items. Hardiness control, commitment, and challenge represent three related dimensions. The control dimension consists of items that represent the characteristic of believing that one is capable of managing potentially stressful events (e.g., planning ahead can help avoid most future problems). The commitment dimension consists of items that represent an ability to find meaning in potentially stressful events (e.g., most of my life gets spent doing things that are worthwhile). The challenge dimension has items related to the ability to interpret potentially stressful events as opportunities (e.g., changes in routine are interesting to me).

It has been suggested that analysis of hardiness may be done using either the three dimensions (separately) or the composite score as long as the composite score is more consistently and strongly related to the dependent variables of interest than the separate dimensions (Funk, 1992). It is straightforward to evaluate this empirically by comparing associations between the composite score and dependent variables of interest with associations between the hardiness dimensions and dependent variables and using the composite score only when it is as strong a predictor as the dimensions taken separately.

### Depressive Symptoms

Depressive symptoms were measured using the Center for Epidemiological Studies-Depression scale (CES-D). The CES-D is a short scale that was designed to measure symptoms of depression in the general population (Radloff, 1977). The CES-D measures symptoms of depression (e.g., poor appetite, restless sleep, sadness) using 20 items on a 4-point scale. The 4-point scale represents how often each symptom occurred during the past 7 days as follows: 0 (rarely or none of the time, less than 1 day); 1 (some or little of the time, 1-2 days); 2 (occasionally or a moderate amount of time, 3-4 days); and 3 (most or all of the time, 5-7 days). The CES-D is scored by reverse coding the appropriate items and summing the scores to obtain an overall score.

### PTSD Symptoms

Symptoms of posttraumatic stress were measured using the impact of events scale (IES) (Horowitz, Wilner, & Alvarez, 1979; Sundin & Horowitz, 2002; Sundin & Horowitz, 2003). The IES consists of 15 items describing the subjective impact or symptom related to a traumatic event. These items are related to two response sets or subscales including intrusion (e.g., I had waves of strong feelings about it) and avoidance (e.g., I stayed away from reminders of it). Each item has a 4-point response describing the frequency of symptoms during the past 7 days as follows: 0 (not at all); 1 (rarely); 3

(sometimes); and 5 (often). Subscales for intrusion (seven items) and avoidance (eight items) are obtained by summing the appropriate items and the overall IES score by summing all 15 items.

# Brief Symptoms Inventory

Self-reported psychological symptoms and distress were measured using the Brief Symptoms Inventory (BSI). The BSI is a shortened (54 item) version of the Symptoms Checklist-90-Revised (SCL-90-R). It was developed as a brief alternative to the complete scale (Derogatis & Melisaratos, 1983). The BSI consists of nine primary dimensions, each with five to seven items measured on a 5-point scale (0-4) ranging from "not-at-all" to "extremely." These dimensions are quantified by computing the means score for subscale items. The dimensions of this scale include the following: somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. The instrument also includes a general severity index (GSI) that consists of the average of all 54 items. This instrument has shown good convergent validity, construct validity, test re-test reliability, and internal consistency (Derogatis & Melisaratos, 1983).

### **Statistical Methods**

Descriptive statistics were obtained for demographic variables including age, education, marital status, years of police service, and police rank. For descriptive purposes, continuous demographic variables, such as age and years of service, were broken into meaningful descriptive categories and reported as frequencies and percentages along with the other categorical demographic variables. Age-adjusted means and comparisons across gender for the CES-D, IES and BSI scores were completed using analysis of covariance (ANCOVA). Dichotomous variables were compared across groups by means of chi-square statistics or Fisher's exact tests where expected frequencies were too small for valid chi-square tests. All significance tests were performed at the alpha = 0.05 level.

Linear regression analysis was used to estimate associations between hardiness as an independent variable and CES-D score, the two IES subscales and total IES, along with the nine BSI dimensions and total GSI. We tested for interactions between gender and hardiness dimensions to assess the observed differences in the strength of associations be-

tween hardiness and the dependent variables of interest between men and women. Results were reported as unstandardized and standardized regression coefficients (e.g., regression slopes with hardiness dimension as independent variable and CES-D, IES or GSI as dependent variable). Regression analyses were adjusted for important covariates including age, education and marital status. All analyses were performed using the SAS system for statistical analysis (SAS STAT Procedures Guide, 2006).

### **RESULTS**

# **Demographics**

Demographic statistics are presented in Table 1. The study population had 40 women and 65 men with a higher percentage of men aged 50 years or older (13.8% men vs. 2.5 % women). More than half of the participants had education including at least four years of college. The percentage of women who were divorced was nearly double that for men (17.5% women vs. 9.2% men) with a similar pattern for those who were single. There were approximately twice as many men with at least 15 years of police service as women, and women had a higher percentage of rank at the level of police officer with men having a higher proportion at the rank of detective.

### **Hardiness**

Since the three hardiness dimensions were more consistently and strongly associated with the dependent variables of interest than the composite scale, analyses were done using the separate dimensions. Therefore, descriptive statistics for the composite hardiness scale are not reported. Higher values for the hardiness dimensions indicate higher levels of hardiness. Men and women had similar mean values for the hardiness challenge dimension (p = 0.83) while men had higher levels than women on both hardiness commitment and hardiness control (p = 0.01 and p = 0.04 respectively; Table 2).

	Wor	men	M	len	Tot	al
Characteristic	(n =	40)	_ (n :	= 65)	(N =	105)
	Freq	%	Fred	<b>1</b> %	Freq	%
Age Group						
< 40 years	23	57.5	35	53.8	58	55.2
40-49 years	16	40.0	21	32.3	37	35.2
50 + years	1	2.5	9	13.8	10	9.5
Education						
High School/GED	5	12.5	14	21.5	19	18.1
College < 4 years	14	35.0	18	27.7	32	30.5
College 4 + years	21	52.5	33	50.8	54	51.4
Marital Status						
Single	13	32.5	11	16.9	24	22.8
Married	20	50.0	48	73.8	68	64.8
Divorced	7	17.5	6	9.2	13	12.4
Years Served						
1-5 years	11	27.5	11	16.9	22	21.0
6-10 years	9	22.5	7	10.8	16	15.2
11-15 years	11	27.5	18	27.7	29	27.6
15+ years	9	22.5	29	44.6	38	36.2
Rank						
Police Officer	30	75.0	38	58.5	68	64.8
Sergeant/ Lieutenant	6	15.0	8	12.3	14	13.3
Captain	0	0.0	3	4.6	3	2.9
Detective	3	7.5	15	23.1	18	17.1
Other	1	2.5	1	1.5	2	1.9

Table 2. Hardiness, depressive symptoms, PTSD symptoms, and brief symptoms inventory total score (GSI) by gender, adjusted for age.

	Wom Mear	nen n (SE)	Mea	n (SE)	<i>p</i> value	
Hardiness						
Challenge	8.4	(0.47)	8.5	(0.37)	0.83	
Commitment	9.2	(0.34)	10.4	(0.27)	0.01	
Control	9.2	(0.30)	10.0	(2.00)	0.04	
CES-D	8.4	(1.07)	6.7	(0.84)	0.21	
Depression <sup>a</sup> (%)	12.3 %	, ,	6.3 %		0.31	
IES total score	14.1	(2.68)	15.9	(2.10)	0.61	
Intrusive	6.8	(1.33)	7.0	(1.04)	0.89	
Avoidant	7.3	(1.46)	8.9	(1.15)	0.43	
PTSD <sup>b</sup> (%)	28.5 %	, ,	31.7 %	, ,	0.72	
GSI Ó	0.48	(0.06)	0.36	(0.05)	0.13	

<sup>&</sup>lt;sup>a</sup>Depression defined as CES-D total score of 16 or more. <sup>b</sup>PTSD defined as IES total score of 26 or more.

### **Depressive Symptoms**

The CES-D scores had values ranging from zero to 38 (Table 2). Men had lower mean CES-D scores than women, but the difference was not statistically significant (p = 0.21). We also computed the percentage of individuals with and without depression based on a CES-D score of 16 or more as an indicator of the presence of depression (McDowell & Newell, 1996). This resulted in age-adjusted estimates of the prevalence of depression with 12.3% in women and 6.3% in men. While this is an apparently large difference, it was not statistically significant (p = 0.31).

### **PTSD Symptoms**

There were no significant differences between men and women for the IES composite score or subscale scores (Table 2). We estimated the age-adjusted prevalence of moderate to severe PTSD symptoms using the cutoff point of 26 or more for the IES total score (Corneil, Beaton, Murphy, Johnson, & Pike, 1999). This resulted in moderate to severe PTSD symptom prevalence of 28.5% for women and 31.7% for men, which were not significantly different (p = 0.67).

### Brief Symptoms Inventory

The overall mean level of psychological distress as measured by the GSI was higher for women (0.48) than men (0.36) but the difference was not statistically significant (p = 0.13). Norms for the GSI are published in terms of mean GSI with the mean for normal non-patients being 0.30 with standard deviation 0.31 (Derogatis & Melisaratos, 1983). The mean GSI for our sample was 0.42, with standard deviation 0.39. This implies a higher than normal level of psychological distress for our sample of police officers, with women being particularly high.

### **Hardiness and Depressive Symptoms**

The hardiness control dimension was significantly and negatively associated with depressive symptoms as measured by the CES-D for both men and women (Tables 3 and 4). The standardized regression coefficients for this association were nearly the same for men ( $\beta = -0.36$ ) and women ( $\beta =$ -0.37) indicating similar relationships between hardiness control and depressive symptoms. The control dimension was not significantly associated with the depression dimension of the BSI. Depressive symptoms (CES-D) were significantly

negatively associated with the hardiness commitment dimension for women (p < 0.0001;  $\beta = -0.69$ ) but not for men (p =0.139;  $\beta = -0.19$ ). The test for interaction between sex and hardiness commitment in predicting CES-D score was statistically significant (p = 0.004), indicating that the association reported above for women was significantly higher than for men. There was no association between depressive symptoms and the hardiness challenge dimension for either men or women.

# **Hardiness and PTSD Symptoms**

The total IES score and the two IES subscales were significantly and negatively associated with the hardiness commitment dimension for women only (Tables 3 and 4). The intrusive subscale seemed to have a stronger contribution to the overall association between PTSD symptoms and hardiness commitment with higher standardized regression coefficient ( $\beta = -0.54$ ) relative to the contribution of the avoidant subscale ( $\beta = -0.37$ ). The test for interaction between gender and hardiness commitment in predicting IES score was not significant (p = 0.08); but the interaction for predicting the intrusive subscale was significant (p = 0.020), confirming that women had a stronger statistically significant negative association than men for this subscale. There were no associations between the IES scales and hardiness challenge or hardiness control.

# Hardiness and Brief Symptoms Inventory

The GSI was significantly and negatively associated with hardiness commitment for men only ( $\beta = -0.26$ , p = 0.04) but the association for women was of roughly similar order of magnitude ( $\beta = -0.31$ , p = 0.08) and was not statistically significant. This was likely due to the smaller sample size for women. The test for interaction between hardiness commitment and gender in predicting the GSI was not significant (p=0.15).

### **DISCUSSION**

We have shown that hardiness control and commitment dimensions have significant and potentially protective crosssectional associations with measures of psychological distress. Also evident are significant gender differences in these associations for depressive symptoms and PTSD symptoms,

with significant associations among women but not men.

Overall, our sample of officers had a higher mean level of psychological distress than did the non-patient norm sample from the Brief Symptom Inventory — GSI police = 0.48, GSI norm population = 0.36 (Derogatis & Melisaratos, 1983). The overall mean level of psychological distress as measured by the GSI was higher for women (0.48) than men (0.36) but the difference was not statistically significant (p = 0.13).

Additional evidence of increased psychological distress among the police was found with depression and PTSD scores. In this regard, the age-adjusted prevalence of female officers who met CES-D criteria (score of >16) for depression was nearly twice that of male officers (12.3% and 6.3% respectively). This result is similar to the United States general population studies (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). This gender difference in prevalence of depression has been reported and discussed for the Buffalo police officers in a previous study (Darensburg et al., 2006). Women having higher levels of depression than men has been a common finding in epidemiological studies (Wulsin et al., 2005; Weissman et al., 1996). Several studies have also reported that women with PTSD are twice as likely to have comorbid depression and anxiety disorders when compared to men (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995).

The higher prevalence of depression among women may be due to comorbidity with PTSD and the influence of type of traumatic event exposure. It has been reported that women have differential exposure to work trauma and higher levels of stress from dealing with violent persons and dealing with exposure to sex discrimination and prejudice (Brown & Fielding, 1993).

It has been argued that social isolation, conflict with colleagues, and negative group climate are relatively strong predictors of depression in policewomen, and that management stressors impacted female officers more than the dangers of police work (Dormann & Zapf, 2002; Thompson, Kirk-Brown, & Brown, 2000). Since management and social support have been identified by women as important for achieving job satisfaction (Harris, Moritzen, Robitshek, Imhoff, & Lynch, 2001), these sources of stress are important in explaining findings that female police officers have higher prevalence of psychological distress.

Managing multiple roles and dealing with work and family conflict is a more common challenge for female officers than for male officers. These stressors could lead to female

Table 3. Associations between hardiness dimensions and psychological distress defined by CES-D, IES, and BSI scores for women. Adjusted for age, education, and marital status.

				Haldines	nai dilicas Dilicipadi	   			
	Chal	Challenge		Comr	Commitment		O	Control	
Variable	B (SE)	p value	β	B (SE)	<i>p</i> value	β	B (SE)	<i>p</i> value	β
CES-D	0.39 (0.45)	0.388	0.16	-2.60 (0.55)	<.0001	-0.69	-1.80 (0.80)	0.029	-0.37
IES total score	0.04 (0.86)	0.968	0.01	-3.59 (1.22)	9000	-0.47	-1.33 (1.62)	0.418	-0.14
Intrusive	-0.03 (0.45)	0.956	-0.01	-2.13 (0.61)	0.001	-0.54	-0.73 (0.84)	0.392	-0.15
Avoidant	0.06 (0.44)	0.892	0.02	-1.46 (0.65)	0.031	-0.37	-0.60 (0.82)	0.474	-0.12
GSI	0.005 (0.02)	0.830	0.04	-0.07 (0.04)	0.077	-0.31	-0.05 (0.05)	0.284	-0.18
Note. B = unstandardized regression	ıdardized regrest	sion coeffici	ent; SE = st	coefficient; SE = standard error; $\beta$ = standardized regression coefficient.	standardize	d regression	coefficient.		

Table 4. Associations between hardiness dimensions and psychological distress defined by CES-D, IES, and BSI scores for men. Adjusted for age, education, and marital status.

Challenge         Commitment of the point of the p		C			C			•		
B (SE) <i>p</i> value β B (SE) <i>p</i> value  0.18 (0.27) 0.506 0.09 -0.48 (0.32) 0.139  al score -0.81 (0.73) 0.275 -0.13 -0.90 (0.91) 0.322		Cla	llenge		Comm	itment		S	Control	
al score -0.81 (0.73) 0.275 -0.13 -0.90 (0.91) 0.322	Variable	B (SE)	p value	β	B (SE)	p value	β	B (SE)	p value	β
-0.81 (0.73) 0.275 -0.13 -0.90 (0.91) 0.322	CES-D	0.18(0.27)	0.506	60.0	-0.48 (0.32)	0.139	-0.19	-1.01 (0.35)	900.0	-0.36
-0.20 (0.38) 0.593 -0.07 -0.35 (0.45) 0.444	IES total score	-0.81 (0.73)	0.275	-0.13	-0.90 (0.91)	0.322	-0.13	-0.73 (1.06)	0.492	-0.09
trt.0 (0t.0) 00.0 (00.0) 02.0	Intrusive	-0.20 (0.36)	0.593	-0.07	-0.35 (0.45)	0.444	-0.10	-0.37 (0.52)	0.477	-0.09
	Avoidant	-0.61 (0.41)	0.140	-0.18	-0.56 (0.51)	0.276	-0.14	-0.36 (0.60)	0.550	-0.08
GSI -0.02 (0.01) 0.193 -0.16 - <b>0.03 (0.02) 0.041 -0.26</b>	GSI	-0.02 (0.01)	0.193	-0.16	-0.03 (0.02)	0.041	-0.26	-0.02 (0.02)	0.354	-0.12

officers being more at risk for depressive symptoms. Since the number of female-headed, single-parent families has been increasing in recent years, it is possible that some of the female officers are heads of single-parent households and therefore have sole responsibility for raising children (Kasen, Cohen, Chen, & Castille, 2003). Added to this is shift work, which may place a strain upon family schedules and child care.

Secondly, the present results suggest that both women and men officers have equally higher levels of PTSD symptomatology (28.5% and 31.7% respectively) than seen in the general population. Women from the general population were found to have higher PTSD rates than men (18.3% and 10.2% respectively; Kessler, 1995). Additionally, the present sample suggests higher rates of PTSD when compared to other emergency responders and cohorts of police officers (Bennett, Williams, Page, Hood, & Woollard, 2004; Chang et al., 2003; Robinson, Sigman, & Wilson, 1997; Wagner, Heinrichs, & Ehlert, 1998). There are likely many factors which explain both high rates and similarity of PTSD symptom levels in police officers. First, we presently do not have data on such factors as the degree of identification with victims, frequency of exposure, and coping styles. Also, the type of traumatic exposure may explain the increased levels of PTSD in both women and men (Breslau, 1998). Other studies which considered these factors had contrary results. In one study, female officers reported exposure to more traumatic incidents, such as natural disasters, suicide, child and spousal abuse, than male officers (Martin, McKean, & Veltkamp, 1986). Also, Violanti and Gehrke (2004) found a 33-fold higher risk for PTSD among female police officers who were exposed to abused children than female officers who were not, and a 4.3-fold increased likelihood of PTSD when they witnessed someone dying. It may also be possible that PTSD symptoms mask depression as well (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995).

### **Hardiness as a Protective Trait**

Of considerable interest in the present study were results concerning associations between psychological distress and hardiness. Results in Table 3 indicate that female officers high on the commitment dimension of hardiness had significantly lower levels of depression and PTSD. For women, there was a negative association between hardiness commitment and the overall psychological distress score (GSI) which approached significance (p = 0.077). Also, in women the hardiness control dimension was significantly and negatively associated with depression (p = 0.029). In male officers (Table 4), hardiness commitment was not associated with depression or PTSD scores, but did have a significant protective association with the overall GSI psychological distress score (p = 0.041). Similar to female officers, the hardiness control dimension had a significant protective association with depressive symptoms in male officers (p = 0.006).

These results suggest that hardiness, as an overall trait, may be less effective in police work for ameliorating psychological distress than are the individual dimensions of commitment and control. This was especially evident among policewomen, where only hardiness commitment was significantly associated with psychological distress (Table 3). In light of these findings, it is therefore important to understand the nature of these significant components in the context of police work.

Such findings appear contrary to Maddi's (2002; 2004) suggestion that individual hardiness components of challenge, commitment, and control by themselves are not enough to turn stressful changes to advantage. According to Maddi (2004), if one is strong in commitment, she/he will stay involved, as that seems the best way to find what is experientially interesting and meaningful. They do not become isolated or alienated. If one is strong in control, she/he will seek influence on outcomes around them, even if difficult. If one is strong in challenge, she/he will continue to learn from positive or negative experiences, and will be less likely threatened by change. Maddi (2004) adds that people high in commitment but low in control and challenge are enmeshed with the people, things, and events around them, never thinking to have an influence through or to reflect on their experience in the interactions. They would have little individuality, and their sense of meaning would be contributed completely by the social institutions in which they are enmeshed.

In the context of police work, a strong enmeshment into the social institution may actually be beneficial for officers, especially women. The sense of cohesiveness evident in police work may be a factor (Violanti, 1996). As such, this protection may, by itself, supersede the need for individual officers to be high in such hardiness traits as challenge and control. Following Antonovsky's (1990) definition, resilience reflects the extent to which individuals and groups can call upon their resources and competencies in ways that allow them to render challenging events coherent, manageable, and meaningful. A police officer's capacity to render challenging experiences meaningful, coherent, and manageable reflects the interaction of person and organizational factors. Such a model of resilience integrates person and organizational factors to provide a proactive framework for developing and sustaining police officer resilience (Paton, Violanti, & Smith, 2003). Another issue to be addressed is differences between male and female officers in terms of the influence of commitment on reducing distress. Commitment, as a component of hardiness, reflects the tendency to find meaning and purpose in potentially stressful events. It is speculated that policewomen high in commitment, despite the difficulties experienced in a male dominated environment, recognize a positive side to policing and are more secure being enmeshed in a cohesive network. The very situations that lead policemen to assume the job is stressful may in essence stimulate the female officers with high commitment to do battle (Hart, Wearing, & Headley, 1995). The question then becomes one of individual differences and officers' perceptions of their work, their status outside of work, and the amount of social support they perceive. For the highly committed policewoman, distress can act as a catalyst for positive adaptation and growth (Tedeschi & Calhoun, 1995).

The present results suggest that we should further consider the implications of elevated PTSD symptoms and depression in police work and the protective impact of hardiness. A defining characteristic of police work is the risk of exposure to highly challenging and potentially threatening events capable of eliciting acute stress and posttrauma reactions. It is important to understand that exposure to stress is unpredictable. Recent acts of terrorism present new challenges and introduce new sources of risk (Paton et al., 2003). In order to more effectively deal with these new and uncertain risks in policing, better ways of promoting both personal and organization networks that enhance resiliency become increasingly important.

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### REFERENCE LIST

- Antonovsky, A. (1990). Personality and health: Testing the sense of coherence model. In H.S.Friedman (Ed.), *Personality and disease* (pp. 155-177). New York: John Wiley & Sons.
- Bartone, P. T. (1995). A short hardiness scale. http://www.stormingmedia.us/84/8458/A845892.html . Ref Type: Internet Communication
- Bennett, P., Williams, Y., Page, N., Hood, K., & Woollard, M. (2004). Levels of mental health problems among UK emergency ambulance workers. *Emergency Medicine Journal*, *21*, 235-236.
- Breslau, N. (1998). Epidemiology of trauma and posttraumatic stress disorder. In R. Yehuda (Ed.), *Psychological trauma* (pp. 1-29). Washington, DC: American Psychiatric Press, Inc.
- Brown, F. & Fielding, J. (1993). Qualitative differences in men and women police officers' experience of occupational stress. *Work and Stress*, *7*, 327-340.
- Chang, C. M., Lee, L. C., Connor, K. M., Davidson, J. R., Jeffries, K., & Lai, T. J. (2003). Posttraumatic distress and coping strategies among rescue workers after an earthquake. *The Journal of Nervous and Mental Disease*, 191, 391-398.
- Corneil, W., Beaton, R., Murphy, S., Johnson, C., & Pike, K. (1999). Exposure to traumatic incidents and prevalence of posttraumatic stress symptomatology in urban firefighters in two countries. *Journal of Occupational Health Psychology*, 4, 131-141.
- Darensburg, T., Andrew, M. E., Hartley, T. A., Burchfiel, C. M., Fekedulegn, D., & Violanti, J. M. (2006). Gender and age differences in posttraumatic stress disorder and depression among Buffalo police officers. *Traumatology*, 12, 220-228.
- Derogatis, L. R. & Melisaratos, N. (1983). The Brief Sympton Inventory: An introductory report. *Psychological Medicine*, 13, 595-605.
- Dormann C. & Zapf D. (2002). Social stressors at work, irritation and depressive symptoms: Accounting for unmeasured third variables in a multi-wave study. *Journal of Occupational and Organizational Psychology*, 75, 33-58.
- Flin, R. (1996). Sitting in the hot seat. Leaders and teams for Critical Incident Management. Chichester: Wiley.

- Funk, S. C. (1992). Hardiness: a review of theory and research. Health Psychology, 11, 335-345.
- Harris, J. I., Moritzen, S. K., Robitshek, C., Imhoff, A., & Lynch, J. L. A. (2001). The comparative contributions of congruence and social support in career outcomes. The Career Development Quarterly, 49, 314-324.
- Hart, P. M., Wearing, A. J., & Headley, B. (1995). Police stress and well-being: integrating personality, coping and daily work experiences. Journal of Occupational and Organizational Psychology, 68, 133-256.
- Horowitz, M., Wilner, N., & Alvarez, W. (1979). Impact of Event Scale: a measure of subjective stress. Psychosomatic Medicine, 41, 209-218.
- Janoff-Bulman, R. (1992). Shattered assumptions. New York: Free Press.
- Kasen, S., Cohen, P., Chen, H., & Castille, D. (2003). Depression in adult women: age changes and cohort effects. American Journal of Public Health, 93, 2061-2066.
- Kessler, R. C., Sonnega, A., Bromet, E., Hughes, M., & Nelson, C. B. (1995b). Posttraumatic stress disorder in the National Comorbidity Survey. Archives of General Psychiatry, 52, 1048-1060.
- Linley, P. A. & Joseph, S. (2004). Positive change following trauma and adversity: a review. Journal of Traumatic Stress, 17, 11-21.
- MacLeod, M. D. & Paton, D. (1999). Police Officers and Violent Crime: Social psychological perspectives on impact and recovery. In J.M. Violanti & D. Paton (Eds.), Police trauma: Psychological aftermath of civilian combat. Springfield, Ill.: Charles C. Thomas.
- Maddi, S. R. (2004). Hardiness: An operationalization of existential courage. Journal of Humanistic Psychology, 44, 279-298.
- Maddi, S. R. (1990). Issues and interventions in stress mastery. In H.S.Friedman (Ed.), Personality and Disease (pp. 121-154). New York: John Wiley & Sons.
- Maddi, S. R. (2005). Hardiness: The courage to be resilient. In J.C.Thomas, D. L. Segal, & M. Hersen (Eds.), Comprehensive handbook of personality and psychopathology (pp. 306-321). Hoboken, New Jersey: John Wiley & Sons.
- Maddi, S. R., Khoshaba, D. M., Persico, M., Lu, J. L., Harvey, R., & Bleecker, F. (2002). The personality construct of hardiness, II: Relationships with comprehensive tests of per-

- sonality and psychopathology. Journal of Research in Personality, 36, 85.
- Martin, C. A., McKean, H. E., & Veltkamp, L. J. (1986). Posttraumatic stress disorder in police working with victims: A pilot study. Journal of Police Science and Administration, 14, 98-101.
- McDowell, I. & Newell, C. (1996). Depression. In Measuring health: A guide to rating scales and questionnaires (2) ed., pp. 238-286). Oxford: Oxford University Press.
- Moran, C. & Colless, E. (1995). Positive reactions following emergency and disaster responses. Disaster Prevention and Management, 4, 55-61.
- Paton, D. (1994). Disaster relief work: an assessment of training effectiveness. Journal of Traumatic Stress, 7, 275-288.
- Paton, D., Violanti, J. M., & Smith, L. M. (2003). Promoting capabilities to manage posttraumatic stress: Perspectives on resilience. Springfield, Ill: Charles C. Thomas.
- Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. Applied Psychological Measurement, 1, 385-401.
- Robinson, H. M., Sigman, M. R., & Wilson, J. P. (1997). Dutyrelated stressors and PTSD symptoms in suburban police officers. Psychological Reports, 81, 835-845.
- SAS STAT User's Guide, Version 8 (1999). Cary, NC: Sas Institute.
- Sundin, E. C. & Horowitz, M. J. (2002). Impact of Event Scale: psychometric properties. British Journal of Psychiatry, 180, 205-209.
- Sundin, E. C. & Horowitz, M. J. (2003). Horowitz's Impact of Event Scale evaluation of 20 years of use. Psychosomatic Medicine, 65, 870-876.
- Tedeschi, R. G. & Calhoun, L. (1995). Trauma and transformation: Growing in the aftermath of suffering. Thousand Oaks, CA: Sage Publications.
- Thompson, B. M., Kirk-Brown, A., & Brown, D. (2000). Women police: The impact of work stress on family members. In P.A.Hancock & P. A. Desmond (Eds.), Stress, workload and fatigue (pp. 200-210). New Jersey: Lawrence Erlbaum Associates.
- Violanti, J. M. (1996). The impact of cohesive groups in the trauma recovery context: police spouse survivors and dutyrelated death. Journal of Traumatic Stress, 9, 379-386.

Violanti, J. M. & Gehrke, A. (2004). Police trauma encounters: Precursors of compassion fatigue. *International Journal of Emergency Mental Health*, 8, 75-80.

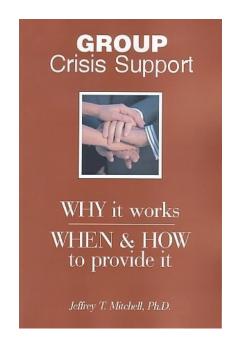
Wagner, D., Heinrichs, M., & Ehlert, U. (1998). Prevalence of symptoms of posttraumatic stress disorder in German professional firefighters. *American Journal of Psychiatry*, 155, 1727-1732.

Weissman, M. M., Bland, R. C., Canino, G. J., Faravelli, C., Greenwald, S., Hwu, H. G. et al. (1996a). Cross-national epidemiology of major depression and bipolar disorder. *JAMA*, *276*, 293-299.

Wulsin, L. R., Evans, J. C., Vasan, R. S., Murabito, J. M., Kelly-Hayes, M., & Benjamin, E. J. (2005). Depressive symptoms, coronary heart disease, and overall mortality in the Framingham Heart Study. *Psychosomatic Medicine*, 67, 697-702.

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