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Reports of Prior Exposure to Potentially Traumatic Events and PTSD in Troops Poised for Deployment

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Exposure to potentially traumatic events (PTEs), posttraumatic stress disorder (PTSD) symptomatology, and the mental health status of 2,947 military personnel were assessed prior to deployment on a peacekeeping mission. Approximately 74% of the soldiers reported being exposed to at least one PTE. The mean number of PTEs reported was 2.38, most of which did not occur during previous deployments. Approximately 6% of the participants exceeded our screening criteria for PTSD and 43% endorsed elevated levels of psychological distress. These findings document a high rate of exposure to PTEs in soldiers prior to their deployment. These results also highlight the need to screen for PTEs when attempting to isolate the rates of PTSD following a specific traumatic event and to examine the effects of cumulative exposure to PTEs.

KEY WORDS: rates of exposure; PTSD; military personnel; lifetime.

United States (US) military personnel who deploy to overseas military operations have been shown to be at risk for the development of mission-specific stress and chronic posttraumatic stress disorder (PTSD; Kulka et al., 1990; Litz, Orsillo, Friedman, Ehlich, & Batres, 1997; Sutker, Uddo, Bailey, & Allain, 1993). The majority of empirical studies examining the psychological outcomes associated with mission stressors have revealed a strong link between the frequency and intensity of exposure to potentially traumatizing circumstances and PTSD (Adler, Vaitkus,

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& Martin, 1996; Green, Grace, Lindy, & Gleser, 1990; Kulka et al., 1990). However, the relationship between reports of exposure to mission-specific stressors and psychological outcomes is far from isomorphic. Consequently, researchers have begun to examine additional factors that may create risk for the development of mission-specific stress reactions.

In an attempt to identify these factors, numerous correlational studies have examined predisposing variables and postdeployment experiences that render some soldiers particularly vulnerable to debilitating stress reactions in the field and subsequent symptoms of PTSD (Green et al., 1990; Macklin et al., 1998; McCranie, Hyer, Boudewyns, & Woods, 1993; Solomon, 1995). In addition, several comprehensive causal modeling studies have revealed that mission-specific PTSD is associated with a number of predeployment vulnerability factors, including prior exposure to potentially traumatic events (PTEs), contextual features of the mission, and features of the postdeployment environment (e.g., Fontana, Schwartz, & Rosenheck, 1997; King, King, Fairbank, Keane, & Adams, 1998).

Until recently, investigators have focused chiefly on establishing the rates of PTSD, as they relate to specific deployment-related PTEs, failing to evaluate the prevalence of PTSD as referenced to specific life span PTEs (e.g., Kulka et al., 1990). In addition, only a few studies have investigated the prevalence of reports of prior exposure to PTEs in military personnel (e.g., Kulka et al., 1990; Merrill et al., 1999; Stretch, Knudson, & Durand, 1998). This is problematic given that a number of other studies have shown that a history of exposure to PTEs and PTSD are risk factors for the development of PTSD (e.g., Breslau & Davis, 1987; King et al., 1998). This implies that some of the studies documenting rates of mission-specific stress reactions may be inflated given that some soldiers may be at greater risk for PTSD and other adjustment problems as a result of exposure to PTEs that occurred prior to deployment.

This study is a preliminary exploration of the retrospective accounts of exposure to PTEs and PTSD across the life span in a cohort of military personnel prior to deployment to a stressful overseas mission. Our goal was also to develop an understanding of the mental health of troops and various demographic variables associated with psychological distress prior to deployment.

Method

Participants were 2,947 US army personnel who were administered a comprehensive psychosocial questionnaire prior to their deployment to Bosnia-Herzegovina. The participants were drawn from a variety of units stationed throughout Germany. A research coordinator on site provided instructions and answered questions. All soldiers present for duty on the day of the survey administration were asked to participate. Participation was voluntary; the sample

was one of convenience and was not randomly or strategically selected. There is no information on the rate of refusal.

The questionnaire included the USAMRU-E PTSD Scale (Bartone, Adler, & Vaitkus, 1994; Castro & Adler, 1999), the Brief Symptom Inventory (BSI; Derogatis, 1993), and a Brief Lifespan Trauma Checklist. The USAMRU-E PTSD Scale uses a Likert-type scaling (1–5) to evaluate the frequency of the 17 PTSD symptoms as defined in the DSM-IV. The internal consistency of the USAMRU-E PTSD Scale has been found to be excellent ($\alpha = .92$; Adler, Huffman, & Castro, 1999). The BSI is a 53-item version of the SCL-90 designed to screen for a wide range of psychological symptoms. The Brief Lifespan Trauma Checklist is a five-item measure rationally derived to cover the high base rate of exposure to PTEs (see Appendix). We were concerned that a measure requiring detailed reporting of PTEs would be overly burdensome and would elicit underreporting in these active duty soldiers.

Results

Demographics and Military Characteristics

The mean age of the participants was 26 ($SD = 6$, range 17–66). The sample had 10% women. Fifty-eight percent of the participants were married. The ethnic backgrounds were diverse: 58% were Caucasian, 26% were African-American, 9% were Hispanic, 3% were Asian, and 5% were multiracial and other. Fifty-five percent had a high school education or greater. Approximately 56% of the sample were junior enlisted, 36% were noncommissioned officers, and 7% were officers/warrant officers. Thirty percent of the participants had served in previous missions.

Exposure to PTEs

Approximately 74% of the study group reported being exposed to at least one PTE and 60% reported experiencing more than one PTE. The mean number of types of PTEs reported was 2.38 ($SD = 2.04$); however, the mode was 0 and the median was 2.00. The majority of reported PTEs (70%) did not occur during previous military deployments. Caucasians reported more PTEs than minorities, $F(1, 2926) = 31.97$, $p < .001$. There were no martial, age, rank, or educational differences in the number of PTEs endorsed.

As shown in Table 1, the most prevalent PTE was witnessing serious injury or illness. Soldiers who were older reported greater exposure to natural disaster, $F(3, 2729) = 3.66$, $p < .01$, physical assault, $F(3, 2719) = 5.22$, $p < .001$, and serious illness or injury to self, $F(3, 2722) = 8.90$, $p < .001$. Soldiers who held higher ranks reported greater exposure to natural disaster, physical assault, serious

Table 1. Prevalence of PTSD by Exposure Type

Type of potentially traumatic events	Percentage of peacekeepers reporting exposure to specific traumas	Prevalence of PTSD by type of exposure (%)
Natural disaster	37	8
Sexual assault	7	18
Physical assault	26	12
Serious injury or illness to self	39	11
Witnessing serious injury or illness	54	8

illness or injury to self, witnessing serious illness or injury, and witnessing death, $\chi^2(6, N = 2759) = 22.70$, $p < .001$; $\chi^2(6, N = 2751) = 17.95$, $p < .01$; $\chi^2(6, N = 2754) = 29.55$, $p < .001$; $\chi^2(6, N = 2753) = 112.93$, $p < .001$; $\chi^2(6, N = 2753) = 135.02$, $p < .001$, respectively. Soldiers who had greater than a high school education reported witnessing serious illness or injury more frequently than soldiers who had less than a high school education (44% of those with greater than 12 years of education versus 56% of those with less than 12 years of education; $\chi^2(3, N = 2890) = 15.42$, $p < .001$). Men reported more incidents of witnessing serious illness or injury to others (53% of men, 46% of women; $\chi^2(3, N = 2892) = 24.87$, $p < .001$). Women reported more incidents of sexual assault (27% of women, 5% of men; $\chi^2(3, N = 2898) = 184.71$, $p < .001$). Caucasians reported more exposure to physical assaults (29% of Caucasians, 21% of ethnic minorities; $\chi^2(3, N = 2840) = 25.97$, $p < .001$), serious illness or injury to self (42% of Caucasians, 34% of ethnic minorities; $\chi^2(3, N = 2844) = 28.05$, $p < .001$), and witnessing serious illness or injury to other (58% of Caucasians, 49% of ethnic minorities; $\chi^2(3, N = 2843) = 25.75$, $p < .001$).

Symptoms of Psychological Distress

We estimated the prevalence of PTSD in our study group according to the DSM-IV criteria (American Psychiatric Association, 1994). Participants were considered PTSD cases if they reported at least one PTE and endorsed at least one reexperiencing symptom, three avoidance or numbing symptoms, and two arousal symptoms, "often" to "very often." This decision rule yielded a PTSD prevalence estimate of 5.9%. Soldiers who met criteria for PTSD were younger than those who did not (24 vs. 26; $F(1, 2769) = 12.82$, $p < .001$). Those soldiers who met criteria for PTSD were also more likely to be unmarried, to hold a lower rank, and to be less educated, $\chi^2(3, N = 2954) = 13.37$, $p < .001$; $\chi^2(2, N = 2821) = 32.89$, $p < .001$, $\chi^2(3, N = 2941) = 21.71$, $p < .001$, respectively. In addition, those soldiers meeting criteria for PTSD reported a significantly greater number of PTEs than those who did not, $\chi^2(8, N = 2997) = 151.91$, $p < .001$. The mean number of types of PTEs reported by soldiers with PTSD was 4.10 ($SD = 1.84$),

whereas the mean number of types of PTEs reported by those without PTSD was 2.28 ($SD = 2.00$). We conducted a hierarchical multiple linear regression predicting PTSD symptom severity from demographic variables and the number of PTEs reported, $F(6, 2610) = 65.67$, $p < .001$, $R^2 = .13$. The number of PTEs endorsed was the only significant predictor of PTSD symptom severity (beta $= .33$, $p < .001$).

Forty-three percent of the study group endorsed elevated levels of psychological distress, defined by Derogatis (1993) as T-scores (as referenced to the nonpatient norms provided by Derogatis, 1993) on the general severity index (GSI) greater than or equal to 63, or any two clinical scale T-scores greater than or equal to 63. The clinical scales with the highest elevations were Hostility, Paranoid Ideation, and Psychoticism, suggesting elevated levels of anger and distrust in others and problems related to withdrawal and isolation (see Table 2). These high rates of distress are likely to reflect moderately high levels of tension, worry, and anxious apprehension in troops poised for deployment. It should be emphasized that the categorization of elevated distress does not imply lasting pathology or degree of functional impairment. In addition, applying the norms based on the general population may inflate estimates of distress in military personnel (Stretch et al., 1996).

Discussion

It was once thought that extremely stressful events that produced severe and chronic distress were rare. The results from this study suggest otherwise. Moreover, the rates of reported exposure to PTEs were generally consistent with the findings from recent epidemiological studies in community samples in which rates of exposure to PTEs ranged from 40% to70% (Breslau, Davis, Andreski, & Peterson,

Table 2. Prevalence of Distress on the Brief Symptom Inventory Subscales

Subscales	Percentage reporting clinically significant levels of distress
Somatization	13
Obsessive–compulsive	28
Interpersonal sensitivity	22
Depression	25
Anxiety	17
Hostility	35
Phobic anxiety	20
Paranoid ideation	36
Psychoticism	35
General Severity Index	26
Caseness	43

Note. $N = 1238$ for these results. The N for this analysis is lower than for the primary analyses as approximately half of the participants were not administered this measure.

1991; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995; Kilpatrick, Saunders, Best, & Von, 1987; Norris, 1992; Resnick, Kilpatrick, Dansky, Saunders, & Best, 1993). Kessler et al. noted that the most common PTEs were witnessing someone being badly injured or killed (35.6% of men and 14.5% of women), being involved in a fire, flood, or natural disaster (18.9% of men and 15.2% of women), and being involved in a life-threatening accident (15% of men and 13.8% of women). Consistent with our results, previous published studies have also shown substantial rates of multiple-event exposure to potentially traumatic events (e.g., Kessler et al., 1995; Resnick et al., 1993). Further, the rate of PTSD in our sample was comparable to rates reported previously; prior studies have reported lifetime PTSD rates of 8–15% (e.g., Breslau et al., 1991; Kessler et al., 1995; Kulka et al., 1990; Resnick et al., 1993).

There are limitations to our study that should be noted. We did not conduct clinical interviews, nor did we index specific PTEs when assessing for PTSD. We also did not measure the severity of the potentially traumatic experience, its subjective impact, or the exact number of events experienced in a given category.

Our results are noteworthy when coupled with the strong relationship between cumulative exposure to PTEs and PTSD found in this and other studies (e.g., Kessler et al., 1995; Resnick et al., 1993). These results suggest that previous conclusions on the prevalence and impact of PTSD following exposure to specific traumatic events may be distorted as study participants are likely to have experienced other traumatic events prior to the event in question. As a result, the reported rates of PTSD in previous studies could be a reflection of significant distress as a result of cumulative rather than specific exposure. These results also call attention to the need for further measurement development to assess the exact relationship between exposure, salient elements of the event, and psychological outcomes.

Further, these results indicate that prior to deployment many military personnel report exposure to numerous PTEs and that some soldiers struggle with significant psychological distress. The results of this study suggest that it may be beneficial for commanders to screen soldiers with substantial trauma histories so as to provide secondary prevention. In addition, these results imply that it may be important to inform soldiers that both single and cumulative exposure to PTEs may evoke symptoms consistent with a significant stress response and to provide referral information.

Appendix: Brief Lifespan Trauma Checklist

Sometimes things happen to people that are very stressful or disturbing. Please indicate which of these stressful events (if any) you may have experienced in your life.

	YES, ON A DEPLOYMENT	YES, NOT ON A DEPLOYMENT	NO, NEVER
1. Natural Disaster (flood, hurricane, etc.)	1	2	3
2. Sexual Assault	1	2	3
3. Physical Assault	1	2	3
4. Serious Illness or Injury to Self	1	2	3
5. Witnessing Serious Illness or Injury	1	2	3

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