

# REPORT DOCUMENTATION PAGE

*Form Approved*  
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY <i>(Leave blank)</i>	2. REPORT DATE 19 March 1999	3. REPORT TYPE AND DATES COVERED	
4. TITLE AND SUBTITLE Psychological Screening with Deployed and Nondeployed Soldiers		5. FUNDING NUMBERS	
6. AUTHOR(S) Amy B. Adler, Ann H. Huffman, and MAJ Carl A. Castro		8. PERFORMING ORGANIZATION REPORT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Commander Attn: Medical Research Unit CMR 442 APO AE 09042		10. SPONSORING / MONITORING AGENCY REPORT NUMBER	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) US Army Medical Research & Materiel Command Ft. Detrick, Frederick, MD 21702-5012		11. SUPPLEMENTARY NOTES	
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution unlimited.		12b. DISTRIBUTION CODE	
13. ABSTRACT <i>(Maximum 200 words)</i>  The US military has instituted a program of psychological screening for soldiers redeploying from the NATO mission in the mission in the former Yugoslavia in order to assess troop well-being. The screening process consisted of three clinical scales assessing symptoms of post-traumatic stress disorder, depression, and alcohol problems. Personnel scoring above criteria on the clinical scales received an interview to determine referral need. Outcome rates of deployed Army soldiers (N=54,587) in Bosnia were compared with a group of nondeployed soldiers (N=790) in Germany. In all, fewer deployed soldiers met criteria for a follow-up interview or received a referral than nondeployed soldiers. This was especially true for lower enlisted males and enlisted females. Conducting screening at redeployment and the stressors of garrison life may have contributed to the relatively high outcome rates of the nondeployed sample.			
14. SUBJECT TERMS deployed, nondeployed, psychological screening, post-traumatic stress disorder, depression, alcohol, garrison		15. NUMBER OF PAGES	
17. SECURITY CLASSIFICATION OF REPORT UNCLAS		16. PRICE CODE	
18. SECURITY CLASSIFICATION OF THIS PAGE UNCLAS	19. SECURITY CLASSIFICATION OF ABSTRACT UNCLAS	20. LIMITATION OF ABSTRACT	

Psychological Screening with Deployed and Nondeployed Soldiers<sup>1</sup>

Amy B. Adler,<sup>2</sup> Ph.D., Ann H. Huffman, M.Ed., and MAJ Carl A. Castro, Ph.D.

U.S. Army Medical Research Unit – Europe

Walter Reed Army Institute of Research

19990325 046

<sup>1</sup>The views expressed in the article are those of the authors and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government (Para 4-3, AR 360-5).

<sup>2</sup>Dr. Adler is also with the University of Maryland-European Division.

Address correspondence to: Commander, ATTN: Medical Research Unit, CMR 442, APO AE 09042; International Tel.: +49-6221-172626

### Abstract

The US military has instituted a program of psychological screening for soldiers redeploying from the NATO mission in the former Yugoslavia in order to assess troop wellbeing. The screening process consisted of three clinical scales assessing symptoms of post-traumatic stress disorder, depression, and alcohol problems. Personnel scoring above criteria on the clinical scales received an interview to determine referral need. Outcome rates of deployed Army soldiers (N=54,587) in Bosnia were compared with a group of nondeployed soldiers (N=790) in Germany. In all, fewer deployed soldiers met criteria for a follow-up interview or received a referral than nondeployed soldiers. This was especially true for lower enlisted males and enlisted females. Conducting screening at redeployment and the stressors of garrison life may have contributed to the relatively high outcome rates of the nondeployed sample.

## Psychological Screening in Deployed and NonDeployed Soldiers

When people are exposed to a significant stressor, their health may be affected. The impact of work-related stressors has been examined in the literature on industrial-organizational psychology (e.g., Holt, 1982; McGrath, 1976; Murphy, Hurrell, Sauter, & Keita, 1995) and traumatic stress (e.g., Rosenheck & Fontana, 1994; Ursano & McCarroll, 1994; Weisaeth, 1994; Williams, 1993). One group exposed to a work-related stressor is military personnel on deployment. Military personnel assigned to peacekeeping missions may confront environmental and psychosocial stressors that have an impact on their health. Group medical screening is one strategy for addressing this risk. Such screening can identify those in need of further service, assess the stressfulness of a particular experience, and provide comparison data for groups experiencing different environments.

Medical screening is a relatively new phenomenon in the US military (Brundage, 1998; Hawley, 1998). In response to the medical concerns following the Gulf War in 1991, the US military set a policy to assess the health of all military personnel returning to their home station from the NATO mission in the former Yugoslavia. All personnel complete a brief checklist of physical complaints, and a brief survey regarding their mental health status. The data presented here are taken from the psychological portion of the screening program.

## Method

### Deployment Study

#### Participants

During the period February 1996 through July 1998, a total of 54,587 Army personnel completed the psychological screening process. A demographic description of the group is presented in Table 1. In all, the majority was active duty army and in the enlisted ranks.

#### Procedure

The Joint Medical Surveillance Screening program, initiated in December 1995 by the U.S. Army, Europe and 7<sup>th</sup> Army, was mandatory for anyone deployed longer than 30 consecutive days. During the period just prior to leaving the deployment, participants were given a survey with two components: demographic questions and clinical scales. If they scored above criteria on one of the three clinical scales, they were asked to fill out a secondary survey and were then interviewed to determine whether they needed a referral to a mental health professional.

#### Instruments

Demographics. Participants were asked about their gender, educational history, marital status, and military background.

The PTSD Checklist. A 17-item PTSD checklist was developed by the US Army Medical Research Unit-Europe. Each item was followed by a 5-point scale (1=not at all to 5=very often). The cut-off score for this scale was 6 or more items rated at the 4 (often) or 5 (very often) levels.

Self-Rating Depression Scale. The Self-Rating Depression Scale (SDS; Zung, 1965) is a 20-item scale assessing depressive symptoms. Respondents rate themselves on a 4-point scale (1=none or a little of the time to 4=most or all of the time). In this study, a raw score of 44 was used as a cut-off, which is a score mid-way in the mild range identified by Zung (1993). In addition, personnel indicating any agreement with the statement "I feel others would be better off if I were dead" were also considered to meet criteria regardless of their overall cut-off score.

CAGE Scale. The CAGE questionnaire (Ewing, 1984) is a 4-item scale assessing alcohol problems. The scale includes issues such as attempts to cut-back alcohol use, and feeling annoyed by comments about one's drinking. The cut-off criterion was an affirmative response to two or more of the items.

Secondary Screening Survey. Participants who met criteria on the primary screening survey were asked to complete a brief secondary survey. In later versions of the secondary survey, respondents are asked about their family history of alcohol use and suicide, their interest in speaking with a counselor, and whether they had thought about harming themselves or others.

#### Nondeployment Comparison

During April through July of 1998, 790 nondeployed active duty Army personnel stationed in Germany participated in a garrison-based psychological screening program. The program was identical in procedure to the program conducted with the redeploying forces mentioned above. Data collection occurred at 9 locations with 11 companies. A description of the sample demographics can be found in Table 2.

## Results

In the deployed data set, 19.1% exceeded criteria on at least one of the primary scales which was significantly lower than the nondeployed rate of 25.6%,  $\chi^2(1, N=54,678) = 21.37, p < .001$ . Deployed rates were lower than nondeployed rates on two of the primary screening scales, the PTSD checklist and the SDS. On the PTSD checklist, 4.8% of the deployed sample exceeded criteria whereas 7.5% of the nondeployed sample exceeded criteria,  $\chi^2(1, N=55,374) = 12.38, p < .001$ . On the SDS, 10.2% of the deployed sample exceeded criteria whereas 16.1% of the nondeployed sample exceeded criteria,  $\chi^2(1, N=56,376) = 28.64, p < .001$ . There were no significant differences on the CAGE questionnaire; 9.4% of the deployed sample exceeded criteria whereas 10.4% of the nondeployed sample exceeded criteria,  $\chi^2(1, N=54,769) = .92, p = .34$ . In terms of mental health referral, significantly fewer deployed soldiers received a referral (2.8%) than in the nondeployed sample (11.3%),  $\chi^2(1, N=53,527) = 192.05, p < .001$ .

The differences between the deployed and nondeployed samples were then analyzed taking into account rank and gender. The same significant differences in primary scale and referral rates between the deployed and nondeployed samples were found in the sub-samples of male and female junior enlisted soldiers, and female senior enlisted soldiers. Deployment status differences were not found between male officers. There were too few female officers in the nondeployed sample to make comparisons with the deployed group.

On the secondary screening survey, deployed and nondeployed respondents responded similarly to whether they had considered harming themselves or others. Also,

deployed and nondeployed respondents reported similar interest in speaking with a counselor.

### Discussion

Surprisingly, we found that deployed soldiers scored significantly lower on psychological symptom scales than a comparison group of nondeployed soldiers. Although this difference was limited to junior enlisted males, and enlisted females, it is still an intriguing finding.

Several possible explanations may account for the findings. For example, the timing of the redeployment assessment may have influenced the deployed group's scores. At redeployment, soldiers may feel an increase in general wellbeing associated with going home which dampens their ratings of psychological distress. Soldiers deployed to a more stressful environment, or on a combat mission, may in fact have higher psychological symptom scores than nondeployed soldiers. In addition, nondeployed soldiers face the stress of extra garrison duties. Clearly, follow-up research can help to identify the key factors responsible for the direction of the findings.

## References

Brundage, J.F. (1998). Military medicine and medical surveillance in the post-cold war era. Military Medicine, 163, 272-277.

Ewing, J.A., (1984). Detecting alcoholism: the CAGE questionnaire. Journal of the American Medical Association, 252, 1905-1907.

Hawley, A. (1998). Health surveillance: An operational imperative? Journal of the Royal Army Medical Corps, 144, 67-71.

Holt, R.R. (1982). Occupational stress. In L. Goldberger & S. Breznitz (Eds.), Handbook of stress: Theoretical and clinical aspects (pp. 419-444). New York: The Free Press.

McGrath, J.E. (1976). Stress and behavior in organizations. In M.D. Dunnette (Ed.), Handbook of industrial and organizational psychology (pp. 1351-1395). Chicago: Rand McNally.

Murphy, L.R., Hurrell, J.J., Sauter, S.L., & Keita, G.P. (Eds.). (1995). Job stress interventions. Washington, D.C.: American Psychological Association.

Rosenheck, R.R., & Fontana, A. (1994). Long-term sequelae of combat in World War II, Korea and Vietnam: A comparative study. In R.J. Ursano, B.G. McCaughey, & C.S. Fullerton (Eds.), Individual and community responses to trauma and disaster (pp. 330-359). Cambridge: Cambridge University Press.

Ursano, R.J., & McCarroll, J.E. (1994). Exposure to traumatic death: The nature of the stressor. In R.J. Ursano, B.G. McCaughey, & C.S. Fullerton (Eds.), Individual and community responses to trauma and disaster (pp. 46-71). Cambridge: Cambridge University Press.

Weisaeth, L. (1994). Psychological and psychiatric aspects of technological disasters. In R.J. Ursano, B.G. McCaughey, & C.S. Fullerton (Eds.), *Individual and community responses to trauma and disaster* (pp. 72-102). Cambridge: Cambridge University Press.

Williams, T. (1993). Trauma in the workplace. In J.P. Wilson & B. Raphael (Eds.), *International handbook of traumatic stress disorders* (pp. 925-933). New York: Plenum Press.

Zung, W.K.W. (1964). A Self-Rating Depression Scale. *Archives of General Psychiatry*, 12, 63-70.

Zung, W.K.W. (1993). *The Measurement of Depression*. Indianapolis, IN: Dista Products Company, Eli Lilly and Company.

Table 1Sample Demographics for Deployed and Non-deployed Soldiers

Demographic Variable	Percent	
	Deployed <sup>1</sup>	Non-Deployed <sup>2</sup>
<b>Gender*</b>		
Male	89	82
Female	11	19
<b>Race*</b>		
White	59	51
African-American	24	28
Hispanic-American	9	11
Asian-American	2	3
Other	6	8
<b>Rank*</b>		
Junior Enlisted	48	52
Noncommissioned Officers	38	41
Officers/ Warrant Officers	14	8
<b>Marital Status</b>		
Married	55	56
Single	36	34
Divorced	6	7
Separated	3	3
<b>Education</b>		
High school/GED	35	33
Some college	44	45
College degree	17	18
Graduate degree	4	4

<sup>1</sup>N=54,587.<sup>2</sup>N=790.\*Chi Square differences between deployed and non-deployed samples were significant at  $p < .001$ .Note: Columns may not sum to 100 because of rounding.

## Author Note

Amy B. Adler, U.S. Army Medical Research Unit-Europe and University of Maryland-European Division; Ann H. Huffman, U.S. Army Medical Research Unit-Europe; Carl A. Castro, U.S. Army Medical Research Unit-Europe.

The views expressed in the article are those of the authors and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government (Para 4-3, AR 360-5). Special acknowledgement to MAJ Paul T. Bartone and CPT Thomas W. Britt for initiating the psychological battery program, to LTC Bruce Crow and CPT Robert Bienvenu for providing key support, and to the mental health staff assigned to the psychological screening program.

Correspondence should be addressed to Commander, CMR 442, ATTN: Medical Research Unit, APO AE 09042. The telephone number is +49-6221-172626. E-mail may be sent to [Amy\\_Adler@heidelberg.smtplink.amedd.army.mil](mailto:Amy_Adler@heidelberg.smtplink.amedd.army.mil).

# The Impact of Deployment History on the Well-being of Military Personnel

Huffman, Adler and Castro

## Key words:

Psychological screening, depression, post-traumatic stress disorder, alcohol problems,

Bosnia, deployment length, OPTEMPO

# Psychological Screening with Deployed and Nondeployed Soldiers

Adler, Huffman and Castro

Key words:

psychological screening, depression, post-traumatic stress disorder, alcohol problems,  
Bosnia, deployment, garrison, medical surveillance