



Original article

Prevalence of mental health symptoms in Dutch military personnel returning from deployment to Afghanistan: A 2-year longitudinal analysis

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ABSTRACT

Objective: Recent studies in troops deployed to Iraq and Afghanistan have shown that combat exposure and exposure to deployment-related stressors increase the risk for the development of mental health symptoms. The aim of this study is to assess the prevalence of mental health symptoms in a cohort of Dutch military personnel prior to and at multiple time-points after deployment.

Methods: Military personnel ($n = 994$) completed various questionnaires at 5 time-points; starting prior to deployment and following the same cohort at 1 and 6 months and 1 and 2 years after their return from Afghanistan.

Results: The prevalence of symptoms of fatigue, PTSD, hostility, depression and anxiety was found to significantly increase after deployment compared with pre-deployment rates. As opposed to depressive symptoms and fatigue, the prevalence of PTSD was found to decrease after the 6-month assessment. The prevalence of sleeping problems and hostility remained relatively stable.

Conclusions: The prevalence of mental health symptoms in military personnel increases after deployment, however, symptoms progression over time appears to be specific for various mental health symptoms. Comprehensive screening and monitoring for a wide range of mental health symptoms at multiple time-points after deployment is essential for early detection and to provide opportunities for intervention.

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1. Introduction

Despite some controversy regarding the contribution of combat exposure [25], and the prevalence across nations, military personnel are at increased risk for the development of mental health symptoms and psychiatric morbidity following deployment. For instance, research demonstrates a two- to four-fold increase in lifetime prevalence of posttraumatic stress disorder (PTSD) among US combat veterans as compared to those obtained in the general US population [31]. Recent studies in troops deployed to Iraq and Afghanistan confirm that combat exposure and exposure to deployment-related stressors, including “minor” stressors like being away from family and friends, result in an

increased risk for mental health symptoms [17,18,27,33]. Among soldiers and marines in the US, 19% screened positive for mental health concerns after deployment to Iraq compared with 11.3% after deployment to Afghanistan [17]. In UK military personnel, general psychiatric distress was found in 20.8% after deployment to Iraq and 17.3% after deployment to Afghanistan [13]. Therefore, the impact of deployment on the mental health of military personnel and associated burden and cost to the healthcare system is of great public and academic interest [16].

Following deployment to recent operations in Iraq and Afghanistan, prevalence rates in US military personnel for PTSD were 4.7–16.7%; for major depressive disorder (MDD) 4.7–10.3%; for anxiety disorders 6.6–7.9%, and for alcohol abuse 11.8% [17,18,27]. In UK military personnel, prevalence rates for PTSD were 1.3–4.8%; for MDD 3.7%; for anxiety disorders 4.5%, and for alcohol abuse 16.4–26% [13,19,23,32]. The prevalence of PTSD in Dutch military personnel deployed to Iraq was found to be less

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than 5% [12]. Other studies in Dutch military personnel also demonstrated that forgetfulness, difficulty concentrating and fatigue were commonly endorsed symptoms [8]. So, although comparison is limited by differences in measurement instruments and the population studied, the rates show that functional impairments range beyond the scope of PTSD only and that other manifestations of psychiatric morbidity should also be addressed.

Two issues appear to be of vital importance in determining prevalence rates of deployment-related mental health symptoms: assessment of pre-deployment functioning, and monitoring mental health symptoms at multiple intervals following deployment. Most studies assessed the prevalence of symptoms after return from the combat zone only. However, this might lead to an overestimation of symptoms that are attributed to military deployment. In US military personnel, PTSD prevalence rates range from 2.4–7.6% prior to their deployment to Iraq [18,37,42]. Consequently, prospective studies that take pre-deployment mental health into account can be expected to yield lower deployment-related (corrected) prevalence rates for PTSD and other mental disorders. Indeed, a prospective study conducted in a Dutch sample of military personnel deployed to Iraq found that prevalence rates of PTSD adjusted for pre-deployment PTSD were up to 3% lower than unadjusted prevalence rates [12]. After adjustment for baseline characteristics, the prevalence rate of PTSD in UK military personnel did not differ from the pre-deployment rate [32], however, an increase in the rates for PTSD were found in US military personnel [37,42]. In addition, the timing of post-deployment assessments may be of key importance. Several studies have shown that mental health symptoms are more likely to develop several months after returning from the military conflict compared to shortly following homecoming. The rates of psychological symptoms reported by a sample of US military personnel were significantly higher at 120 days' post-deployment than immediately upon return [5]. Therefore, assessment shortly following deployment may underestimate the prevalence of mental health symptoms. A study by Milliken et al. showed increased mental health concerns several months after return in contrast to the rates reported directly after deployment [27]. Also, several studies in civilian [39] and military samples [4,7,9,28] have demonstrated that the course of PTSD varies across individuals, and that in some individuals, PTSD symptoms may remain sub-threshold until months to years following deployment [6]. Thus, to assess the development of mental health symptoms after deployment, pre-deployment health status should be taken into account and participants should be followed for a prolonged period after their return to investigate possible changes over time.

The aim of the current study was to assess the prevalence of mental health symptoms in Dutch military personnel at multiple time-points before and after deployment. Specifically, this paper reports the self-reported prevalence of symptoms of PTSD, depression, anxiety, hostility and fatigue, somatic complaints and sleeping problems; starting prior to deployment and following the same cohort up to 2 years after return from Afghanistan.

2. Methods

2.1. Study population

This study was part of a prospective cohort study on deployment-related health problems in the Dutch armed forces. Participants were Dutch military personnel who were deployed to Afghanistan between 2005 and 2008 as part of the International Security Assistance Force (ISAF) of the NATO, either as part of a Provincial Reconstruction Team (PRT) or as part of Task Force Uruzgan (TFU). Military personnel were informed (oral and written) about this study at the army base. Those who were interested in the study could sign up for participation. There was

financial compensation of €100, – for participation in 3 assessments. A total of 994 individuals volunteered to participate in the study. The study was approved by the Institutional Review Board of the University Medical Center Utrecht (Utrecht, the Netherlands).

2.2. Procedure

Individuals volunteered to participate prior to their deployment to Afghanistan. After a written and verbal description of the study, written informed consent was obtained. Approximately 1 to 2 months prior to deployment (T0) participants completed various paper-and-pencil questionnaires. After a 4-month deployment to Afghanistan, 4 assessments took place; at approximately 1 month (T1), 6 months (T2), 1 year (T3), and 2 years (T4) following homecoming. The first 3 assessments were completed at the army base. The T3 and T4 questionnaires were sent by mail. To maximize response rates and to try to reach non-responders or those who left the Armed Forces, participants were contacted a total of 5 times at each assessment through mail, e-mail and telephone.

2.3. Measures

Demographic measures included age, sex, education level, rank, marital status and the number of previous deployments. Exposure to potentially traumatic and combat-related stressors during the deployment was assessed with a 19-item checklist (Table 1).

Mental health problems were assessed using the depression (16 items), anxiety (10 items), somatic complaints (12 items), sleeping problems (3 items), and hostility (6 items) subscales of the Dutch revised Symptom Checklist (SCL-90-R) [3]. The SCL-90-R contains 90 items rated on a 5-point scale ranging from 1 (not at all) to 5 (very much).

Symptoms of PTSD were measured with the Dutch Self-Rating Inventory for PTSD (SRIP) [20,21]. The SRIP contains 22 items

Table 1
Exposure to combat-related stressors (*n* = 780).

Items	Items experienced	
	Count	%
Enemy fire	483	61.9
Witnessed people suffering	460	59.0
Witnessed wounded	367	47.1
Colleague injured or killed	350	44.9
Incoming fire	302	38.7
Witnessed dead	287	36.8
Rejected by locals	261	33.5
Personal danger	230	29.5
Witnessed others injured/killed	156	20.0
Heard people screaming	153	19.6
Insufficient means to intervene	133	17.1
Mission experienced as useless	105	13.5
Insufficient control over situation	104	13.3
Memories of earlier deployments	94	12.1
Traffic accident	72	9.3
Held at gunpoint	37	4.7
Physical injuries	19	2.4
Colleague held hostage	3	0.4
Held hostage	0	0

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