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**Research Report**

## Soldiers and Trauma

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## DIW Roundup

Politik im Fokus

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# Soldiers and Trauma

Wolfgang Stojetz

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Understanding the risks and consequences of military service in fragile regions is a vital concern facing veterans and policymakers in Germany (and many other nations). Researchers, health professionals, politicians and the news media are actively discussing this contentious topic. A key point in the debate is the psychological well-being of discharged servicemen. The purpose of this column is to offer a perspective on prevalent opinions and evidence regarding the question: What are the risks of deployment in a fragile region for the psychological health of military personnel?

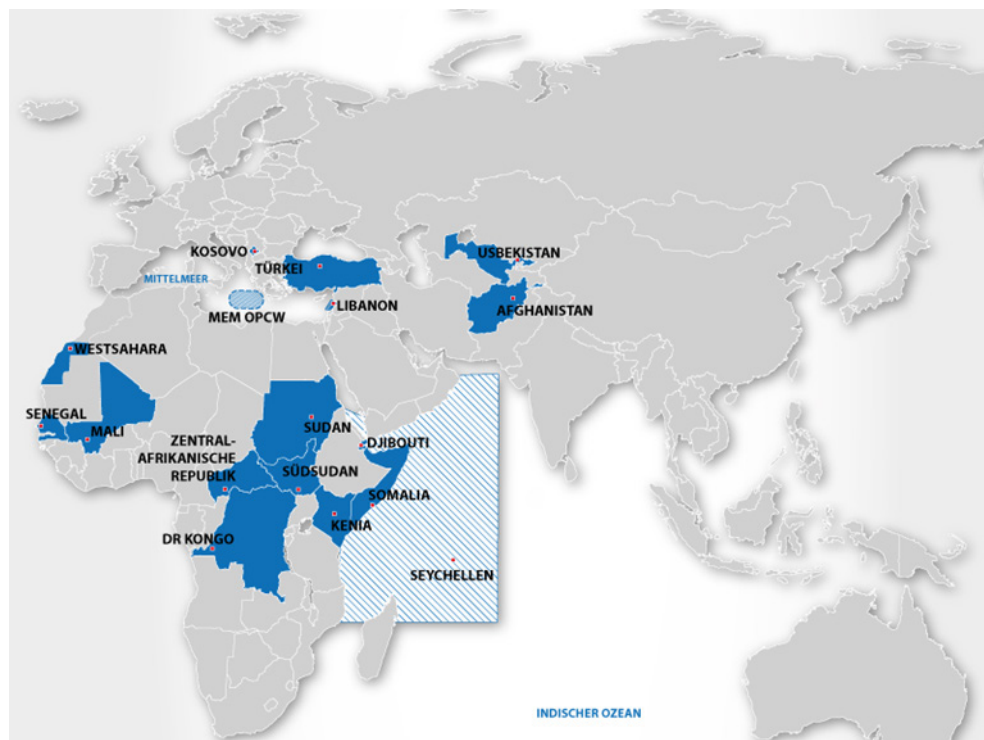
## Introduction

The question of whether and how military service in operations abroad affects psychological well-being is of long-standing concern to veterans and policymakers, as the related costs borne by soldiers and the modern welfare state can be lifelong and dramatic. The controversial academic, political and public debates are fuelled by the large number of personnel involved in military operations around the world and the unique challenges of each operation and region. As of 2014, the US alone has sent 2.8 million troops to serve in contingency operations in Iraq and Afghanistan ([IAVA 2014](#)).

## German missions, returnees and responses

In Germany, the Ministry of Defence (MoD) spent more than €17 billion on military operations between 1992 and 2013, excluding salaries and support missions after natural disasters ([Bundestag 2013](#)). Despite consistently seeking to reduce participation in military operations abroad, in 2014 the German armed forces are still actively engaged in military operations in 17 international regions (see Fig. 1).

Figure 1: German military missions abroad



Source: [Bundeswehr \(2014\)](#)

In the wake of new crises, including those in Iraq, Mali, South Sudan, Syria, and Ukraine, high-level politicians are pitching a reversal that would increase Germany's military engagement ([DIE ZEIT 2014](#)). The Merkel administration's latest "Africa-strategy" paper explicitly suggests military intervention as a viable option ([FAZ 2014](#)).

Traumatic effects among those carrying out these operations are receiving much attention. A cross-sectional study of Germany's Afghanistan veterans reports that 49.2 percent of personnel were exposed to at least one traumatic event during their deployment, with 13 percent experiencing at least four ([Wittchen et al. 2012](#)). The best-known mental and cognitive disorders are major depressive disorder (MDD), traumatic brain injury (TBI) and post-traumatic stress disorder (PTSD). An increasing number of affected returnees are presenting their fates to the public, through blogs, books, TV appearances, open letters to parliament, radio interviews, and newspaper articles. A majority seems to share a distinct set of grievances and harsh appeals for action: 1) Post-deployment screening must be improved to reduce the number of undetected cases of mental health impairments; 2) Existing post-deployment treatment and counselling policy needs to be revised to reduce the number of untreated cases (impeding factors include fears of social stigma, reluctance to receiving medication, concerns about career advancement prospects, and confidentiality); and 3) More research is needed to better protect German soldiers during and after deployment abroad.

Germans politicians have recognized a need for action and the German Bundestag has commissioned several programs to develop and improve facilities that offer psychological and medical assistance to returning soldiers (e.g. [Bundestag 2009](#), [Bundestag 2011](#)). In 2010, a new governmental commissioner position was established

that is responsible for “cases of post-traumatic disorder related to deployment”, along with the creation of the Research and Treatment Center for Traumatic Stress. In terms of research, the key activity was the „*Prävalenz, Inzidenz und Determinanten von traumatischen Ereignissen, PTBS und anderen psychischen Störungen bei Soldatinnen und Soldaten mit und ohne Auslandseinsatz*“ study, directed by Professor Hans-Ulrich Wittchen of Technische Universität Dresden. This project, often referred to as “*Dunkelziffer-Studie*”, is the first large-scale and systematic study of the psychological health of German soldiers, and includes a panel survey.

### What do we know about the psychological effects of military service?

Most of the large economic literature on the consequences of military service in fragile regions documents the strong effects on tangible socio-economic outcomes, such as reduced labour supply ([Siminski 2013](#)), elevated take-up of disability benefits ([Autor et al. 2011](#)), deleterious effects on physical health and mortality ([Bedard et al. 2006](#), [Siminski and Ville 2011](#)), and higher rates of crime and violence ([Rohlfis 2010](#)). A new trend recognizes that these direct impacts may be accompanied by more complex and indirect institutional effects, predominantly via disability compensation programs ([Angrist et al. 2010](#), [Autor et al. 2011](#)). Common to all these effects is the potential microchannel of psychological well-being linking service experience to these outcomes. So, what do we know about the *direct* effect of military service on psychological well-being?

### Veterans vs non-veterans

A large psychological and epidemiological literature presents overwhelming evidence that deployed veterans face a disproportionately higher risk of developing mental health disorders as compared to their non-veteran counterparts. In a detailed review, [Tanielian and Jaycox \(2008\)](#) report that findings for the current prevalence of PTSD in US Afghanistan and Iraq veterans (from “generally comparable” studies) vary between 5 and 15 percent, while major depression is found in between 2 and 14 percent. For Vietnam veterans, an influential study by Dohrenwend et al. points out flaws in service data in earlier studies ([Dohrenwend et al. 2006](#)). Nonetheless, their reinvestigation using new Vietnam era military record data corroborates many results from earlier studies. They report that 18.7 percent of soldiers deployed to Vietnam have, at some point, developed PTSD symptoms, with 9.1 percent suffering from PTSD a decade after deployment.

Economists and other social scientists assert that it is difficult to conclude from these studies that military service is the root cause of observed post-service differences. This has important consequences for public policy, as a necessary condition for eligibility for assistance and disability programs is that existing health impairments are service-related (see e.g. [Autor et al. 2011](#)). The skepticism is motivated by methodological and statistical concerns. Many observers argue that most of these studies are merely descriptive and suffer from small and non-random samples while often lacking a valid counterfactual, thus denying causal identification of the impact of military service (see e.g. [Cesur et al. 2013](#)). Addressing studies that do include a non-veterans control group, [Dobkin and Shabani 2009](#) suggest that these tend to overestimate the effect of military service. The underlying message of their critique is that active duty military personnel are likely to show systematically different traits that are associated with (adverse) mental well-being, but that these are difficult to measure, which makes estimating the causal effect of active duty a daunting task.

There is a traditional literature by economists analyzing the effects of service in Vietnam, Korea or the Second World War, which deals with the ‘selection problem’ by using a so-called instrumental variable strategy. In the vein of the famous Angrist 1990 paper, these studies exploit variation in draft eligibility, an approach that has become very popular, especially among labor economists, but also requires caution (see e.g. [Angrist 1990](#) or [Siminiski 2013](#) for discussions).

Three contributions have applied this approach to psychological health, all looking at US Vietnam era veterans. [Hearst et al. \(1986\)](#) related excess suicide among draft-eligible men to the detrimental effect of military service (a critical review is in [Angrist et al. 1996](#)). [Angrist et al. \(2010\)](#) find weak evidence for a negative effect on mental health outcomes, statistically significant only at the very bottom group of the skill distribution. Similarly, [Dobkin and Shabani \(2009\)](#) associate Vietnam-era service with a higher prevalence of depression and anxiety but cannot establish statistical significance. They suggest that the actual underlying mechanism may be exposure to combat, in which case, as they argue, draft-eligibility is actually a poor instrument for military service.

### Variation in military service experiences

It is obvious that experiences in fragile regions, including exposure to combat, are far from uniform. Designing protective deployment schedules and effective post-service assistance plans requires a more nuanced picture of differing military service experiences.

Drawing on more detailed military records available from the Global War on Terrorism (GWOT), quantitative researchers are now able to explore the effects of variation in military service intensity. A first set of studies applies cohort-variation in casualty rates as proxy measures for service intensity ([Costa and Kahn 2010](#), [Rohlfes 2010](#)). [Siminski \(2013\)](#) questions the validity of such a proxy, though, as one might pick up cohort or age-related effects rather than service intensity.

Another approach is to rely on self-reported service experiences. A few recent studies by psychologists examine the relationship between service intensity and mental health among US GWOT veterans in a regression framework ([Rona et al. 2007](#), [Shen et al. 2009](#)). Their findings suggest that longer deployments are associated with an increased risk of developing PTSD. As put forth by [Cesur et al. \(2013\)](#), these findings are not able to identify what actually triggers mental health impairments, i.e. deployment length as such or exposure to combat. Two new studies by economists argue that GWOT deployment assignment is not related to soldiers’ preferences, socioeconomic status, and family background ([Lyle 2006](#), [Engel et al. 2010](#)), which is in line with a new paper by [Angrist et al. \(2010\)](#), who report that less educated soldiers are not more likely to experience war theater or combat. Relying on such an approach, [Cesur et al. \(2013\)](#) claim to provide the first “robust” evidence for a causal link between exposure to combat and substantially elevated risk for suicidal ideation, needing psychological counseling, and a diagnosis of PTSD.

### Are these findings specific to US soldiers?

Almost all of this literature studies US veterans. New and equally robust evidence comes from the carefully designed and recently completed “*Dunkelziffer-Studie*” that surveyed German servicemen just before and 12 months after their deployment to Afghanistan. A preliminary press release reveals that, using diagnostic techniques similar to US studies, the prevalence rate of PTSD among German soldiers is only around 2 to 3 percent, which is significantly and strikingly lower than that found among US Afghanistan veterans 12 months after return ([TU Dresden 2013](#)). The study

argues, however, that the effect of exposure to “intense assignments, including traumatic events,” as well as the importance of pre-deployment screenings are massively underestimated. Also, an alarming 50 percent of all cases of psychological disorders had remained untreated one year after deployment, echoing claims raised by returnees (see above).

Finally, in a new and somewhat parallel literature, development economists, psychologists and epidemiologists are studying the effects of military service in intra-state conflicts. A pioneering and robust mixed-methods study finds that the main predictor of most serious symptoms of psychosocial distress among young, demobilized fighters of the Ugandan Lord’s Resistance Army generally is exposure to extreme violence (Blattman 2009, Blattman and Annan 2010). After “controlling” for violence, longer service is not robustly associated with higher distress. A second key finding is that exposure to extreme violence increases political activation, which might be explained by personal growth as a positive response to trauma (Blattman 2009).

## Conclusion

Due to statistical concerns, measuring the impact of military service in a fragile region on psychological health is complicated and controversial. The German “Dunkelziffer-Studie” appears to overcome many existing reservations and confirms deficiencies in the areas of (pre- and post-service) screening, diagnosis and treatment as brought forward by German returnees. More research will be required on how differing deployment experiences explain post-deployment differences, and to help craft deployment plans that minimize psychological health risks for soldiers.

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