

Prevalence of Posttraumatic Stress Disorder in Special Operations Forces

Daniel J. Neller, PsyD, ABPP (Forensic); Jimmie J. Butcher, PhD

Hing, Cabrera, Barstow, and Forsten conducted an important study that they state “determines the incidence of PTSD [posttraumatic stress disorder] symptoms” in Special Operations Forces (SOF) Soldiers assigned to the U.S. Army Special Operations Command (USASOC) at Ft. Bragg.¹ Based on results of an anonymous, online survey, they conclude, “Our study focused on SOF Soldiers, and suggests that for this representative sample, conservative estimates for rates of PTSD range from 16% to 20%.” We commend Hing and his colleagues for their work; however, it is our position that their conclusions overstate the actual results of their study.

First, the Hing et al. sample does not seem to adequately represent the greater SOF population. It apparently was derived from a nonrandom procedure, and no more than 5% of all SOF Soldiers invited to participate in the study actually completed the online survey instrument. When considered alone, nonrandom selection procedures or exceedingly low response rates raise serious questions about sample representativeness. When considered jointly, they strongly suggest that a sample differs from its greater population in important ways. The Hing et al. sample’s poor representativeness is evident by the proportions of Soldiers drawn from various units. The 95th Civil Affairs Brigade, USASOC and U.S. Army Special Forces Command Headquarters, and Special Warfare Center and School made up approximately 35%, 29%, and 5% of the Hing et al. sample, respectively. By comparison, they make up only about 5%, 3%, and 19% of the entire Army SOF population. These sample-population differences are both substantial and significant (respective z -scores = -28.2 , -32.1 , 7.2 ; all p values $<.0001$) and provide compelling evidence that

the Hing et al. sample does not adequately represent the greater SOF population.

Second, the Hing et al. study results rest largely on an instrument that has questionable validity when used in anonymous, online surveys of military personnel. At least some findings indicate that, compared with clinical interviews, self-report questionnaires such as the military version of the PTSD Checklist (PCL)² may overestimate PTSD rates in Servicemembers.² Indeed, research to date suggests that Servicemembers endorse a greater number of items on the PCL when the instrument is used in anonymous surveys than when used as part of on-the-record PTSD screenings⁴ or more in-depth interviews.⁵ The PCL also lacks indicators of underreporting and overreporting, calling into question the veracity of symptoms endorsed by survey participants. Taken together, these findings raise questions about the validity of PCL scores when used in anonymous, online surveys of service members, such as the one conducted by Hing and his colleagues.

Third, even if the points raised here are erroneous, it nevertheless appears that Hing and his colleagues misestimated their sample’s base rate (BR) of PTSD.* This is because they interpreted all positive scores on the PCL as true cases of PTSD even though the PCL, like all assessment tools in the behavioral sciences, is an imperfect classification instrument. The recommended cutoff score from the initial validation sample was associated with a true-positive rate (TPR) of 0.82 and a false-positive rate (FPR) of 0.17. This combination of TPR and FPR estimates is not highly discrepant from estimates derived from subsequent studies.^{6,7} If we use these estimates in a setting where the PTSD BR is as high as 20% and

Notes: *Hing and colleagues distinguish prevalence rates (or BRs) from incidence rates. Generally, BRs refer to the proportion of a sample or population that has the condition of interest during a specified period of time. Incidence rates refer to the proportion of new cases of the condition of interest in a sample or population at risk during a specified period of time. We do not assume that identified cases are new, and therefore, we consider BRs to be the more appropriate descriptor.

†Using the TVS to estimate local BR is, of course, subject to reliability restrictions of the procedure and standard errors of proportion for the TPR and FPR estimates. A TVS spreadsheet is accessible at <http://www.richardfrederick.com>.

we observe a case in which a Soldier scores above the cutoff, the probability that he has PTSD is only 0.55. This means that a substantial percentage of survey respondents whom Hing and colleagues classified into their PTSD group probably did not actually have the condition of interest. This conclusion is supported by a simple comparison of the mean PCL scores of the Hing et al. study respondents against the mean PCL scores of participants from the instrument's validation samples. It is further supported by analysis with the Test Validation Summary (TVS),^{8,9} a novel graphing procedure that enables us to estimate local BRs—with the TVS, we see that only about 1% of the Hing et al. sample is expected to have PTSD.[†]

We are cognizant of the many challenges endemic to applied behavioral science research. The overall method Hing and his colleagues used to derive a BR estimate included a nonrandom procedure; an instrument with questionable validity in the context of anonymous, online surveys of military personnel; and a misinterpretation of the meaning of test scores. This general approach does not appear to be uncommon (see, e.g., Ramchand et al.¹⁰) among studies that are otherwise well done and held in high regard (see, e.g., Smith et al.¹¹). Although well-intentioned, these studies can lead to erroneous PTSD BR estimates that can encumber our efforts toward understanding, assessing, and, when necessary, treating SOF Soldiers. They can foster a “continued narrative of PTSD” that “kindle[s] self-fulfilling prophecies and actually contribute[s] to an increase in cases.”¹² They can adversely influence decisions related to policy and resource allocation across the Department of Defense and beyond. But they also remain important for advancing the study of PTSD by reminding us to be careful in our methods, humble in our conclusions, and aware of the greater implications of our work. As such, even though the Hing et al. study does not provide an adequate basis for accurately estimating the BR of PTSD among SOF Soldiers, it contributes to infrastructure on which future studies in this area can be built.

Disclaimers

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Disclosures

The authors have nothing to disclose.

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Dr. Neller is in independent practice in Southern Pines, North Carolina.

MAJ Butcher is affiliated with the United States Army Special Operations Command at Fort Bragg, North Carolina.