Author's response to reviews

Title: Low validity of self-report in identifying recent mental health diagnosis among U.S. service members completing Pre-Deployment Health Assessment (PreDHA) and deployed to Afghanistan, 2007: A retrospective cohort study.

Authors: Remington L Nevin (remington.nevin@us.army.mil)

Version: 3 Date: 13 July 2009

Author's response to reviews: see over
Melissa Norton  
Editor-in-Chief  
BMC Public Health  

Dear Dr. Norton,

I am in receipt of the completed reviewers' reports for manuscript 7200930162964107, entitled “Low validity of self-report in identifying recent mental health diagnosis among U.S. service members completing Pre-Deployment Health Assessment (PreDHA) and deployed to Afghanistan, 2007: A retrospective cohort study”.

I appreciate the reviewers' careful reading and review of this manuscript, and the helpful and thoughtful comments included in their reports. Of the three reviewers' reports, one recommends no changes; one recommends discretionary revisions, and one recommends both minor clarifications and a major revision.

I have attempted to address the requested minor clarifications of this last reviewer in the enclosed revised manuscript, whose changes are explained in detail in the enclosed rebuttal. Pending further editorial direction, my preference would be to defer the recommended major change, as defended in greater detail below. The discretionary revisions and comments from the second reviewer, while thoughtful and helpful, appear mostly rhetorical; some of the more direct questions are also addressed below.

Sincerely,

Dr. Remington Nevin
Major Revisions:

"...All mental health diagnoses are grouped together for the major analyses of the study. The inclusion of ADHD is a major concern. I don’t believe that most people consider attention deficit disorders as mental disorders. Clearly many people work and are completely functional with this diagnosis and it is likely that many veterans would not respond positively to # 7 on the questionnaire if this is their only diagnosis. The authors need to break out their analyses looking [at] this group separately to see if the validity rates change."

I appreciate this reviewer’s perspectives, and will not disagree with the statement that a remote history of ADHD may represent no barrier to functionally successful civilian employment.

However, the recent literature on mental health disorders in U.S. military settings attests to the perspective that a recent active diagnosis of ADHD is relevant. For example, "[d]eployment of soldiers with chronic mental health disorders such as anxiety, attention deficit disorder, and depression is problematic…" (Young RS, Gillian E, Dingmann P, Casinelli P, Taylor C. Army health care operations in Iraq. Conn Med. 2008;72:5-11).

It is the perspective of the present study that a decision to include recent or active ADHD with other mental health conditions in this analysis is fully supported by the literature and by recent military mental health policy. This analysis examines electronic medical records for evidence of a recent history of mental health diagnosis. Remote histories of diagnosis not requiring continued medication or treatment would not necessarily have been identified.

In this analysis, of the 615 subjects with a recent mental health disorder diagnosis, 101 subjects (16.4%) were identified with a recent diagnosis of attention-deficit disorders, with or without hyperactivity. Of these, the vast majority (92%) received primary outpatient diagnosis, highly suggestive of active disorder. Furthermore, a high prevalence of treated attention-deficit disorder conditions among deployed personnel is suggested by other published research (Nevin RL, Pietrusiak P, Caci JB. Prevalence of contraindications to mefloquine use among USA military personnel deployed to Afghanistan. Mal J. 2008;7:30), which demonstrated 78 of 11,725 deployed subjects had been prescribed a treatment for ADHD prior to deployment, comparable to the 101 of 15,195 diagnosed with an attention-deficit spectrum diagnosis in this analysis.

psych_conditions_meds.pdf) states that "[d]iagnosed conditions that are not amenable, or anticipated not amenable to treatment and restoration to full functioning within one year of onset of treatment should generally be considered unfitting or unsuitable for military duty..." Furthermore, of relevance to the treatment of attention-deficit disorder conditions, this same policy states "[p]sychotropics clinically and operationally problematic during deployments include... stimulants", which are of course commonly prescribed to treat ADHD.

The civilian literature also suggests that ADHD remains relevant in pre-employment screening and qualification settings. An analysis of employer restrictions in the United Kingdom suggests "[a]pproximately half of the young people diagnosed with ADHD will continue to have significant problems with concentration, impulsivity, and social interaction which may lead to work difficulties." (Bateman BJ, Finlay F. Long term medical conditions: career prospects. Arch Dis Child. 2002;87:291-2).

For these reasons, the author’s preference is to defer this recommended major revision pending editorial direction. I hope that this clarification addresses the reviewer’s reasonable concerns.

Minor Concerns:

"Page 3: Ist para: What is mefloquine used for?"

A brief parenthetical explanation "(a commonly used anti-malarial)" has been included in this sentence.

"Page 5: Why were phobic disorders and personality disorders excluded? Are they never an issue in military populations?"

These conditions were excluded from analysis for consistency with the methodology of other recently-published reports.

"Page 8: Was the increased prevalence of mental disorders consistent across all diagnoses? How were combat and non-combat occupations determined? Could the analyses be done for active versus reserve troops?"

This analysis did not specifically address the increased risk of specific mental health disorder diagnosis as a function of number of prior deployments. A growing body of literature documents the risk of mental health disorder with deployment (see, for example, the work of Hoge CW et al., particularly Mental health problems, use of mental health services, and attrition from military service after returning from deployment to Iraq or Afghanistan. JAMA. 2006;295:1023-32). This and other work specifically addresses this issue in greater detail than can be described in this report.
Combat versus non-combat occupation is determined based upon occupation data included in DMSS as reported by the individual military services and provided by the Defense Manpower Data Center in standardized format. This demographic stratum is commonly used in U.S. military epidemiological analysis (see, for example, routine analysis by AFHSC available at www.afhsc.mil).

As a result of the composition of military units deployed to Afghanistan at the time of this analysis, non-active duty personnel comprised only a small fraction (approximately 18%, data not shown) of the subjects in this study. Since reserve-component personnel may not always be eligible for care in military health facilities prior to deployment, incomplete retrospective medical data may be available within DMSS from this population. Although these figures were not included in the manuscript for brevity, of the 12,486 active component personnel identified, pertinent diagnosis records were available for 570 (approximately 4.6%). Of the 2,709 non-active component personnel, pertinent diagnosis records were available for only 45 (approximately 1.7%). Since direct comparisons between active-component and non-active component personnel may be subject to ascertainment bias, this strata was not included in Table 1.

The limitations of DMSS data are alluded to in the Discussion section where a definitive reference is provided.

"Page 10: 2nd paragraph is unclear. On a screening questionnaire, if the respondent answered #7 negatively, what would the examiner be looking at to determine a non-deployable disposition? Needs clarification. Also if the examiner wrote they were non deployable, how could they be deployed?"

This paragraph was intentionally left brief, but suggests that the PreDHA process does not result in the identification of disqualifying mental health conditions independent of self-reported responses. The manuscript does not specifically address possible alternative methods of screening available to a pre-deployment examiner to make such a disposition, except as described in the manuscript's final paragraph where an electronic review of medical history and pharmaceutical use is recommended.

Regarding the issue of the deploying of "non-deployable" subjects: as articulated in the manuscript, existing DoD instructions are unclear in regards to authority to prevent deployment, "...nor do they formalize a mechanism for ensuring that service members flagged by the provider as “not deployable”, in fact, are not deployed*.

Page 14; 1st paragraph. The sentence regarding the deployment of persons reporting bipolar and manic disorders is not clear.

This analysis did identify 5 subjects with documented (as opposed to reported) diagnosis of psychotic disorders, and 14 subjects with documented diagnosis of
bipolar or manic disorders who were indeed deployed; however, this paragraph is intentionally conservative in drawing conclusions about whether these deployments occurred in accordance with the requirements of current policy.

Page 15, 2nd paragraph. Statement about the increased sensitivity of the question is unclear.

For the sake of brevity, the data and calculations behind this statement are not shown. This calculation was performed as described, as a form of sensitivity analysis, and suggests the conclusions are qualitatively robust to modest changes in study methodology. A brief statement "(data not shown)" has been included in this sentence for clarification.
Discretionary Revisions:

"How valid is it to accept seeking medical assistance for anxiety and depression as “mental illness” if you are engaged in combat activity that may appear totally without meaning and involves acts from yourself or your officers or fellow soldiers that are violating ethical, moral or other norms?"

I deeply appreciate this line of inquiry; however, it is beyond the scope of this manuscript to directly address these issues.

"Related to this issue is the question as to from what part of the US population do you presently recruit combat personnel? You state that the standards for acceptance of recruits into the military are lowered. You also point out, and find, that repeated deployments are risk factors for mental health disorders, and these are on the increase. Do you have any data on the social and educational background for those that end up with repeated deployments, and that the military recruits from?"

These are valid questions and are worthy of future study, but are beyond the scope of this manuscript to directly address. A limited body of literature describes the evidence underlying changes in accession standards (see, for example, the work of the Accession Medical Standards Analysis and Research Activity, as introduced in Clark KL et al. Reducing medical attrition: the role of the Accession Medical Standards Analysis and Research Activity. Mil Med. 1999;164:485-7). Information on the social and educational background of subjects experiencing multiple deployments is available, but to my knowledge no formal analysis has been published. It is beyond the scope of the current study to directly address this issue.

"Given the possibility that the military is a way out of social misery or difficulties, how can you expect that they will state that they have a mental problem pre deployment?"

This issue is described in further detail in subsequent paragraphs.

"Holding on to conventional professional critique: how valid are the various medical diagnoses given during deployment?"

As a point of clarification, this analysis examined mental health disorder diagnoses occurring among subjects at fixed military health care facilities and within the civilian referral system prior to deployment, and did not specifically examine diagnoses occurring during deployment. Limited published data exists examining the validity and completeness of electronically-documented diagnosis data collected during deployments.
"You mention the potential side effects of mefloquine - any interaction? Did all soldiers take the drug? Always?"

Mefloquine was widely dispensed to U.S. service members during the initial phases of deployment to Iraq, and has been used regularly among U.S. service members on deployments to Afghanistan. Although relevant to a broader discussion of mental health issues and deployment, the subject of mefloquine is not the focus of this report, but will be the subject of a future analysis.

"What are the potential benefits for seeking such care? As I did my army medical service many years ago, it was always a potential problem that sick leave and mental” problems were a potential free ticket home and out of the service, and we were not even at war at that time."

The factors influencing self-reporting of mental health disorder diagnosis among members of an all-volunteer force are not clear, although as described in the manuscript, it appears that significant under-reporting occurs: “Among a larger sample of service members screening positive, a majority indicated perceived barriers to receiving mental health care, including concerns that others in their unit would lose confidence in them, view them as being weak, or blame them for their mental health problems” (Hoge CW, Castro CA, Messer SC, McGurk D, Cotting DI, Koffman RL. Combat duty in Iraq and Afghanistan, mental health problems, and barriers to care. NEJM 2004, 351:13-22). How, why, and to what degree this tendency towards under-reporting represents a change from behaviors observed in prior eras requires further study.