The Impact of the Mission in Afghanistan on the Mental Health of the Reserve Component of the Canadian Forces

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**Issue**

Concern has been expressed by some sources within the public about what they perceive to be the dire state of mental health in Canadian Forces Reservists who have deployed in support of the mission in Afghanistan and the unique challenges they may face in accessing appropriate health care services.

The purpose of this paper is to summarize CF evidence on the mental health of CF Reservists who have deployed to Afghanistan. Current knowledge gaps and planned or ongoing studies will also be described.

**Background**

Since 2001, approximately 40,000 CF personnel have deployed in support of the mission in Afghanistan. This mission has seen CF members engaged in the most extensive and sustained combat operations since the Korean War with 158 CF member deaths.

Canada, like all military partners involved in Afghanistan, as well as those involved in the Iraq war, has monitored the mental health of its deployed population. Data from a number of different sources within the population of CF members who have deployed to Afghanistan confirm service related mental health problems in an important minority. The best available evidence shows that 13% of those so deployed from 2001-2008 were diagnosed with a mental health problem related to their deployment over an average follow up period of five years.

Currently the CF consists of some 68,000 Regular Force personnel and 27,000 Primary Reserve Force personnel. Canada, like the US and UK, has relied on reservists to supplement the work of Regular Force personnel on the missing in Afghanistan. CF data shows that from 2001 to 2008, at the time of deployment in support of the mission in Afghanistan, 89% of deployed personnel were Regular Force personnel and 11% were reservists. Among currently serving personnel with Afghanistan deployment experience, 4,811 out of 35,065 (14%) are currently in the Primary Reserve Forces.

The context in which reservists deploy is different from that of the Regular Forces: Reservists often deploy as individual augmentees with units of Regular Forces personnel and in many cases will have no prior knowledge of many if not most of the individuals with whom they will serve—cohesion has been shown to be a key buffer of the effects of traumatic stress. They also have the additional pressures of leaving their civilian life behind where their work colleagues, families and friends may have little understanding of what the reservist may face while away. Support networks available to their families may not be as organized or accessible as they are for Regular Force personnel. Post-deployment social support has been shown to be an important correlate of post-deployment well-being, but after return from deployment, reservists may not have the same social support in the workplace and the community that Regular Forces personnel
enjoy. Hence, reservists could have greater vulnerability to developing Operational Stress Injuries (OSI’s).

This possible increased vulnerability could be accompanied by incremental barriers to care for OSI’s: Reservists largely access the civilian health care system, which is presumably less attuned to mental health problems of military personnel. In a context in which the leading barrier to care for mental disorders is an individual’s failure to recognize they have a problem for which help is available, having attuned primary care providers is an essential part of the safety net. For those who do recognize mental health concerns, they may access civilian mental health services that remain one of the weakest parts of the overall Canadian health care system. Diagnosis and treatment of traumatic stress disorders is especially weak. While reservists do have eligibility for CF care for service-related problems, those services may be more difficult to access for logistical reasons.

It is these concerns about increased vulnerability and incremental barriers to care among previously deployed reservists that have driven concerns about their mental health in Canada and elsewhere.

Data from the UK shows that their reserve force personnel have a slightly higher risk of post-deployment mental health problems than their regular force counterparts (1). However, these differences are accounted for by differences in combat exposure, cohesion, marital status, and other factors as opposed to intrinsically greater vulnerability (2). Data from the US, on the other hand, shows that there is a significantly higher rate of post-deployment mental health problems in reservists vs. active component personnel and that these differences are NOT accounted for by measured confounding factors. Great caution should be exercised in assuming that the findings on mental health of reservists in other nations to the CF given significant differences in the reserve populations, their role in the military, and their sources of care for mental health problems in the military and civilian sectors (3).

**Reserve Component in CF Mental Health Studies**

Most of the work performed or contracted by the CF examining the mental health of those deployed to Afghanistan incorporates an examination of reserve personnel. The following summarizes what we know as well as studies that are ongoing and planned.

**How to Identify Those Who Most Need Clinical Care**

All of us have experienced some degree of mental health symptoms at times in our lives, but not all of those required clinical intervention. The primary role of a health care delivery system is to target clinical interventions to those who are most likely in need. In order to do so, population based surveys employ survey questionnaires/tools which have validated criteria that identify those respondents most likely to meet diagnostic criteria for the disease in question. Ideally such surveys would have all participants undergo a
clinical assessment in order to determine whether or not a mental health problem is present but this is neither practical nor feasible.

It is important to recognize when looking at different studies that different tools or methods may have been employed to identify mental health problems. In such cases differences seen in the percentages of those with a problem could be a true difference, or they could be due to differences in the tools or questionnaires used to measure mental health problems, as well as the point in time in which the study is conducted in relation to the deployment.

**Enhanced Post-Deployment Screening Data (2006-2010)**

The CF screening and reintegration policy (CEFCOM Direction for International Operations, 1.3-12.F ) (4) requires that all members returning from an international operation of 60 or more days duration undergo the Enhanced Post-deployment Screening Process between 90 and 180 days after return to Canada. The purpose of the screening is to better identify those with deployment-related problems, with a particular focus on psychosocial problems. The data collected during screening is used for the purposes of health surveillance and research.

The screening process consists of completion by the member of a detailed, validated health questionnaire followed by an in-depth interview with a mental health professional. The interviewer completes a form with his or her clinical impression, along with recommendations for follow-up care if needed.

As of February 2011, the CF Tasking Database which captures information about those deployed identified 26,959 individuals who were due screening of which 20,576 had completed their screening at the time of the analysis. This means the analysis captures 76% of those who were due screening. Of those who were screened, 86.1% were Regular Force personnel, 11.7% were reservists, and 2.2% were civilians. The relative proportions of Regular Force and Reserve Force Personnel in the post-deployment screening data mirrors those of the deployed population for the mission (see above), suggesting no meaningful differences in screening compliance between the two components.

While most members returning from this deployment reported good mental health, an important minority (11.7%) reported symptoms of one or more of six common mental health problems. Symptoms suggestive of post-traumatic stress disorder (PTSD), depression, or both were seen in 4.9%. High-risk drinking with and without symptoms of mental health problems was reported by 4.2% and 13.2% of respondents, respectively.

Reservists were less likely than regular force members to report symptoms of PTSD, depression, and any of six common mental health problems (Table 1).
Table 1: Unadjusted Prevalence Rates of Mental Health Problems by Component
(Overall N = 20,576)

<table>
<thead>
<tr>
<th>Component</th>
<th>PTSD and/or Depression¹</th>
<th>Any MH Problem²</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N/Total</td>
<td>%</td>
</tr>
<tr>
<td>Regular</td>
<td>906/17421</td>
<td>5.2%</td>
</tr>
<tr>
<td>Reserves</td>
<td>84/2378</td>
<td>3.5%</td>
</tr>
<tr>
<td>Civilian³</td>
<td>5/443</td>
<td>1.1%</td>
</tr>
<tr>
<td>Total</td>
<td>995/20242</td>
<td>4.9%</td>
</tr>
</tbody>
</table>

These rates are not adjusted for the substantial socio-demographic differences (e.g., age, gender, rank, etc.) between the different components. Because some of these factors confer higher risk of mental health problems in and of themselves, these figures should not be construed to mean that reservists have a lower risk of mental health problems because they are reservists. Instead, these figures simply mean that fewer reservists happened to report these problems than regular forces members.

The question of whether reservists are more vulnerable to deployment-related mental health problems by virtue of their reserve status is an important one, and studies from the US and UK have shown that this is true for at least some deployments. But we do not have enough reservists in this sample to explore that question in sufficient detail.

**In-Garrison Mental Health Studies**

The Health and Lifestyle Information Survey (HLIS) is the CF’s periodic health surveillance survey (5;6). Analysis of the reserve component data found the prevalence of 12 month Depression in the 2004 survey was 4% and appeared to remain stable since 2000 (4%). By comparison 12 month Depression in the Regular Force component in 2004 was 7.1%.

The strongest data on the mental health of Regular vs. Reserve Force personnel come from the Canadian Forces Supplement to the Canadian Community Health Survey Cycle 1.2—Mental Health and Wellbeing. This large, population based survey of Regular and Reserve Force personnel was completed by Statistics Canada in 2002. Analysis showed that reservists had about half the risk of Regular Force personnel for all common mental disorders except alcohol dependence, for which the rates were similar. These differences persisted after adjustment for potential confounding factors.

Hence, in-garrison data paints a picture of, on average, better mental health among reservists than in Regular Force personnel. This finding is significant because past

¹ Some respondents had more both depression and PTSD.
² PTSD, major depression, minor depression, suicidal thoughts, panic disorder, or generalized anxiety disorder.
³ These are Canadian Forces Personnel Support Agency (CFPSA) who deployed in support of the mission.
mental health problems are a potent risk factor for future mental health problems, including Operational Stress Injuries. Hence, for this risk factor at least, reservists would appear to be less vulnerable than their Regular Force counterparts.

An important limitation of both the HLIS 2004 and the Canadian Forces Supplement to the Canadian Community Health Survey Cycle 1.2 studies are that they both were conducted early on during the CF involvement in combat operations in Afghanistan. Consequently they may not accurately reflect any differences that may currently exist. At the time of writing this paper, analysis of the 2008/2009 HLIS Reserve Component data has not been completed.

2010 Operational Mental Health Assessment (OMHA-I)

The purpose of this study was to: 1) identify the prevalence and impact of symptoms of mental health problems in a CF members serving in Task Force Afghanistan; and, 2) determine the utilization of and perceived need for mental health services in CF members while deployed. The focus of this discussion will be on the first objective.

The study (7) consisted of a cross sectional survey of all 2779 Canadian Forces personnel deployed to Kandahar Afghanistan from 15 February 2010 to 15 March 2010. The response rate was 57% which is considered quite reasonable in an operational environment. Respondents included reserve (15%) and regular force (85%) personnel.

The survey primarily defined any mental health problem as the presence of PTSD, depression or anxiety using the same criteria employed in the Enhanced Post Deployment Screening Program. Additionally, the survey asked if the individual had difficulty performing their job as a consequence of any mental health problem or if during the deployment they experienced a stress, emotional alcohol or family problem.

This study found no significant difference in the responses between reserve and regular force personnel on any of these indices of mental well-being (see Table 2). However, these results are not adjusted and do not account for differences in age, sex and other characteristics.

The results of this study are subject to the same limitations as does the EPDS, namely that they only reflect mental health well-being and mental health problems at the time of the survey and these can change over time following the deployment. Although the OMHA explored broader definitions of mental well being beyond those of depression, PTSD and anxiety, assessment of these mental health problems was by use of validated questionnaires and none of these diagnoses were confirmed by a clinician. Finally, this study was not specifically designed or powered to look at reservists as a specific group.
Table 2: Unadjusted Prevalence Rates of Mental Well being by Component in the OMHA (n=1,572)

<table>
<thead>
<tr>
<th>Component</th>
<th>Regular</th>
<th>Reservist</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Count</td>
<td>Column</td>
<td>Count</td>
<td>Column</td>
</tr>
<tr>
<td></td>
<td>Valid N</td>
<td>%</td>
<td>Valid N</td>
<td>%</td>
</tr>
<tr>
<td>Any dysfunction at work due to MH problem</td>
<td>1106</td>
<td>87.7%</td>
<td>183</td>
<td>88.8%</td>
</tr>
<tr>
<td>Yes</td>
<td>155</td>
<td>12.3%</td>
<td>23</td>
<td>11.2%</td>
</tr>
<tr>
<td>Stress, emotional, alcohol or family problem while deployed</td>
<td>873</td>
<td>69.4%</td>
<td>141</td>
<td>68.1%</td>
</tr>
<tr>
<td>Yes</td>
<td>385</td>
<td>30.6%</td>
<td>66</td>
<td>31.9%</td>
</tr>
<tr>
<td>PTSD, depression, or generalized anxiety</td>
<td>1160</td>
<td>91.7%</td>
<td>193</td>
<td>93.2%</td>
</tr>
<tr>
<td>Yes</td>
<td>105</td>
<td>8.3%</td>
<td>14</td>
<td>6.8%</td>
</tr>
</tbody>
</table>

**2011 Operational Stress Injury (OSI) Cumulative Incidence Study**

All of the preceding studies described have provided important information but they also have some important limitations. Specifically, they have focussed on only a subset of the deployed population; the data collected used questionnaires as opposed to clinical diagnosis made by a mental health professional; and, they reflect only brief periods of post-deployment follow-up (e.g., less than a year)

This study overcomes these limitations by estimating the fraction of a broad range of previously deployed personnel formally diagnosed with an OSI by the CF over an average of more than five years of follow-up (8).

The study captured data on all CF personnel who deployed in support of the mission in Afghanistan from 2001 to 2008 of which 89% were regular force and 11% were reservist.

Over an average period of follow-up of 64 months after return from the first deployment, an estimated 30% of the cohort received specialty mental health services (that is, care other than Psychosocial Services or primary care) through the CF. 8% of the entire cohort was diagnosed with Afghanistan-related PTSD (with or without other disorders), and an additional 5.2% were diagnosed with other Afghanistan-related OSI’s, such as depression (2.2%), adjustment disorders (2.0%), or anxiety disorders other than PTSD (1.9%). Non-OSI mental disorders and OSI’s related to other operations were less common in this cohort (affecting 4.5% and 1.2%, respectively).

There was no significant relationship between sex, age or component (Regular vs. Reserve Force) and the diagnosis of an Afghanistan-related OSI (See Table 3). Similar rates of care-seeking in Regular Force and Reserve Force personnel do not suggest incremental barriers to CF for reservists.
Table 3: OSI Cumulative Incidence Study Estimates for Afghanistan-Related OSI’s by Component

<table>
<thead>
<tr>
<th>Component</th>
<th>Regular Force</th>
<th></th>
<th></th>
<th></th>
<th>Reserve Force</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>#</td>
<td>%</td>
<td>95% CI</td>
<td>#</td>
<td>%</td>
<td>95% CI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PTSD</td>
<td>2196</td>
<td>7.9 (6.94, 8.90)</td>
<td>245</td>
<td>8.8 (3.77, 13.84)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Anxiety Disorder</td>
<td>937</td>
<td>3.4 (2.63, 4.13)</td>
<td>47</td>
<td>1.7 (0.00, 3.85)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any Anxiety Disorder</td>
<td>2716</td>
<td>9.8 (8.66, 10.93)</td>
<td>292</td>
<td>10.5 (5.07, 15.89)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depressive Disorder</td>
<td>1591</td>
<td>5.7 (4.84, 6.63)</td>
<td>235</td>
<td>8.5 (3.30, 13.60)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bipolar Disorder</td>
<td>35</td>
<td>0.1 (0.00, 0.27)</td>
<td>0</td>
<td>0.0 -</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Mood Disorder</td>
<td>83</td>
<td>0.3 (0.03, 0.56)</td>
<td>0</td>
<td>0.0 -</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any Mood Disorder</td>
<td>1666</td>
<td>6.0 (5.08, 6.93)</td>
<td>235</td>
<td>8.5 (3.30, 13.60)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjustment Disorder</td>
<td>816</td>
<td>2.9 (2.28, 3.60)</td>
<td>82</td>
<td>2.9 (0.48, 5.41)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Somatoform Disorder</td>
<td>17</td>
<td>0.1 (0.00, 0.14)</td>
<td>0</td>
<td>0.0 -</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Substance-related Disorder</td>
<td>551</td>
<td>2.0 (1.46, 2.51)</td>
<td>27</td>
<td>1.0 (0.00, 2.00)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any of the Above Disorders</td>
<td>3604</td>
<td>13.0 (11.69, 14.30)</td>
<td>418</td>
<td>15.0 (8.77, 21.25)</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Estimated Subgroup</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>27732</td>
<td></td>
<td></td>
<td>2786</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cohort Total</td>
<td>30518</td>
<td></td>
<td></td>
<td>30518</td>
<td></td>
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</table>

The key strengths of this study include the following:

- It reflects the full range of deployment experiences since the beginning of the mission;
- It used cross-validated administrative data from many sources to achieve the most accurate possible picture of who deployed, where they deployed, when they departed, and when the returned;
- The large sample size resulted in narrow confidence intervals for cumulative estimates and will also allow for in-depth modeling and determination of organizational outcomes such as medical release;
- Accurate identification of deployment location will permit informed estimates of OSI cumulative incidence rates for future rotations and future operations;
- It included the review of personnel who appeared to have not utilized mental health care, minimizing the chance of incomplete ascertainment of cases of OSI’s;
- It used a long follow-up period (more than five years, on average);
- It used diagnoses (and clinician attributions to the Afghanistan deployment) that came out of an in-depth, multi-disciplinary diagnostic evaluation;
• Rich data were captured from the medical record—this will permit further analysis about the diagnostic and care processes; and
• Accurate capture of deployment dates will permit the calculation of a true incidence rate and will allow survival analysis, which is the ideal approach for in-depth exploration of factors associated with time-dependent events such as the diagnosis of an OSI after return from a deployment.

For these reasons, this study is stronger methodologically than comparable work done by our closest allies (9;10), which use administrative encounter data for capturing diagnoses. These other studies rely on diagnoses that emanate from much less intensive evaluations done in primary care and behavioural health clinics in addition to more detailed mental health assessments in specialty mental health clinics. These studies have also used a much shorter follow-up period.

There are some limitations to this study with regards to capturing a full picture of the MH burden of Afghanistan deployment on reservists. Specifically, the estimates produced are based on diagnoses made by the CF’s professional mental health clinics only. The diagnoses of members who sought care on their own outside of the CF could not be captured. It is difficult to estimate the extent to which this may be occurring.

Future Planned Studies

2013 CF Mental Health Survey

This study will be conducted in collaboration with Statistics Canada, as a follow up to the 2002 Canadian Forces Supplement to the Canadian Community Health Survey—Mental Health and Well-being Study. The objectives of the 2013 study are to: (1) determine the extent to which the CF’s renewed mental health system has influenced need for mental health services; (2) determine the effect of the mission in Afghanistan on the need for mental health services in currently serving personnel; (3) better understand the occupational impact of mental health problems on the CF; and, (4) explore the need for enhanced psychological support in distressed CF members who do not have an overt mental disorder.

This study will use component (Regular versus Reserve Force), deployment status (previously deployed in support of the mission in Afghanistan vs. not so deployed), and rank as the primary stratification variables.

The design of this study will be better positioned to address issue specific to the reserve component. Specifically it will provide: better estimates of the prevalence of mental health problems in the reserve component who served in Afghanistan, including those that did not seek care; compare the prevalence of mental health problems between the Reserve and Regular Force, adjusting for many factors; understanding of service use/unmet need/and unique barriers to care in the reserve force; and, providing a better understanding of treatment impact in Reserve vs. Regular force members. This will answer these questions as definitively as possible within the intrinsic limitations of survey research.
Summary and Conclusions

Data from our international partners, specifically the US and UK, raises concern that reserve force members deployed to Afghanistan may have higher rates of mental health problems compared to their regular force counterparts. Extrapolation of these findings to the Canadian context is problematic because it does not account for differences in demographics, baseline rates of mental health problems, access to civilian healthcare and social support as well as differences in how reserves are deployed.

Data from in-garrison population show better mental health in reservists than in Regular Force personnel. Better mental health prior to deployment is a protective factor against OSI’s—this may counterbalance other risk factors (e.g., lower post-deployment social support) that could increase vulnerability of reservists.

The comprehensive set of data that the CF has collected on the mental health of members deployed to Afghanistan show a clear and consistent picture in which an important minority go on to experience mental health problems as a consequence of deployment. All studies incorporated the reserve component, and none have demonstrated a clinically meaningful difference in mental health outcomes in this group compared to their regular force counterparts. Similar rates of post-deployment care-seeking among reservists vs. Regular Force personnel do not suggest incremental barriers to care. However, none of these studies were specifically designed to look for differences in mental health outcomes between Reserve and Regular Force members who deployed to Afghanistan. And none of these studies was specifically designed to assess differential service use or barriers between components. The planned 2013 CF Mental Health Survey will provide data which will allow a more meaningful comparison of the mental health impacts of that deployment between components as well as a clearer picture regarding health care utilization and unique barriers to accessing care that may be present in reservists.
Reference List


Ref Type: Report

Ref Type: Report

Ref Type: Report

Ref Type: Report

Ref Type: Report

(9) Hoge CW, Auchterlonie JL, Milliken CS. Mental health problems, use of mental health services, and attrition from military service after returning from deployment to Iraq or Afghanistan. *JAMA* 2006; 295(9):1023-1032.