Title: Attention Deficit Hyperactivity Disorder (AD/HD) in longer-term prison inmates is a prevalent, persistent and disabling disorder

Version: 3 Date: 6 October 2010

Reviewer: Kirsten Rasmussen

Reviewer's report:

This paper explores the relationship between ADHD and criminality by estimating the prevalence of ADHD in longer-term prison inmates, characterising symptoms and cognitive functioning, and comparing the prison inmates with outpatients with ADHD and healthy controls. Prisoners were screened by the use of Wender Utah Rating Scale and the Adult ADHD Self-Report Screener, and were later compared to the other two groups of subjects. The prevalence of ADHD in the prisoners was estimated to 45%. They were highly comorbid for Substance Use Disorder, personality disorders, and other psychiatric disorders, and they had lower IQ. Both ADHD-groups had poorer performance on working memory, while the prison group had poorer results on a continuous performance test.

There has been a greater awareness of ADHD among prisoners during the later years, rightfully so, since it is a risk factor for substance abuse, is related to Conduct Disorder and potentially treatable.

However, I have some serious concerns about the present paper, first of all concerning the method, and particularly the selection of subjects to be compared, which in turn bares consequences for the interpretation of the results.

Apparently the prisoners were initially screened for participation in a clinical trial with methylphenidate. The screening process is not easily grasped from the method section, but from figure 1, which represents a flowchart of the process, it appears that 194 of the initially 315 prospective subjects approached for screening agreed to participate, and out of the screened prisoners, 34 subjects from the Stockholm area and with high enough scores from the screening instruments went on to clinical assessment for ADHD, where finally the presence of the disorder was confirmed for 30 of them. All of these in addition had substance use disorder, and many had other co-morbidities like autism spectrum disorder, mood and anxiety disorder, personality disorder, and 80% of them had received educational assistance in school.

The outpatient subjects with ADHD were recruited from another study with a different set of exclusion criteria. Controls were recruited on training centres (what kind?) and among friends and staff members.

Both the recruitment process and the differences in exclusion criteria suggest that these are non-comparable groups. It is highly probable that an invitation to prisoners to participate in a methylphenidate study and an invitation to
outpatients with established ADHD invited to participate in a study apparently of stress (as judged from the reference list) may attract subjects who differ on a range of variables apart from the in prison or not-distinction. In addition, the prison group was assessed for a range of co-morbid disorders (highly prevalent), while no such assessment was made in the other two groups, apart from two Beck inventories. The prison group was “highly symptomatic and disabled from AD/HD, SUD, overlapping ASD, mood- and anxiety disorders”. Many of the prisoners were under current treatment for psychiatric disorders. From the percentage having received educational assistance in school and having compellingly lower educational level, one might also suspect some kinds of learning disabilities. All of these aspects would be expected to influence performance on neuropsychological tests.

The prevalence of ADHD in the prison group was estimated at 45%, based on scores from self-report questionnaires. Only thirty of the prisoners were, however, clinically assessed as having ADHD. Prisoners reported higher symptom load than non-prisoners with ADHD, while the differences between the groups as rated by significant others were negligible. This could possibly reflect a bias in the recruitment process (prisoners might exaggerate symptoms on the prospect of getting methylphenidate) or it could reflect one of the many co-morbid disorders, many which have symptoms that can mimic ADHD symptoms. These issues need to be discussed.

Substance abuse and various psychiatric disorders are well known to be more prevalent among prisoners than in various other populations, and that prisoners with ADHD have more disorders than subjects outside prison is hardly surprising, although an important reminder to clinicians.

It is also well established that prisoners have poorer cognitive abilities than non-prisoners, regardless of ADHD. In addition, differences in cognitive abilities should be expected in the present study, since they are directly related to different exclusion criteria in the different subject groups. Other studies have focused on neuropsychological measurements among prisoners with ADHD (i.e. Rasmussen, Almvik & Levander, 2001, in Journal of Forensic Neusropsychology), and the high prevalence of ADHD has been addressed in many studies, and has also been addressed in the authors’ own country (Dalteg, Gustafsson & Levander, 1998).

Due to the many methodological issues, I cannot recommend publication at the present time, but I do recommend that the authors make use of their data, and I do agree that the study has certain strengths, especially in terms of comprehensive assessment. Perhaps a comparison of prisoners with and without ADHD could make up an interesting paper.

**Level of interest:** An article of limited interest

**Quality of written English:** Acceptable
**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**
I declare that I have no competing interests.