**ADHD in Older People: An Evidence Based Perspective**
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**Aim**
To review the current literature for evidence in relation to Attention Deficit Hyperactivity Disorder (ADHD) in older people, focussing on prevalence, clinical characteristics, diagnostic criteria, treatment and prognosis.

**Method**
Literature search of various databases including Cochrane, Google Scholar, PubMed, PsychINFO, Medline and NHS Database.

**Keywords**
ADHD, elderly, older adults, Hyperactivity Disorder, diagnosis, diagnostic tools, Attention Deficit Hyperactivity Disorder.

**Background**
ADHD begins in childhood and can persist throughout life. It can have serious consequences. For example, Barkley et al\(^1\) found increased rates of comorbid substance abuse disorder, anxiety disorder, mood disorder, personality disorders, and disruptive behaviour disorders among adults with ADHD that had persisted from childhood into adulthood. They found this rate to be 84.3%.

ADHD remains a controversial diagnostic entity. There are disagreements on its cause, research methodology and even whether it should be classified as a mental disorder \(^2\). So far, most studies in adulthood concern young or middle-aged adults. Less is known about ADHD in old age.

**What is ADHD?**
ADHD is a treatable neuropsychiatric disorder characterized by core symptoms of inattention, hyperactivity and impulsivity, which is pervasive and impairs functioning and is not explained by any other medical or psychiatric condition (DSM IV)\(^3\). The ICD 10 diagnostic criteria for Hyperkinetic Disorder (F 90)\(^4\) are very similar to the DSM IV criteria in terms of inattention, hyperactivity and impulsivity along with the pervasive nature of the presentation and onset before seven years of age with clinically significant distress.

**Gene-environment interaction**
ADHD is predominantly a genetic disorder with environmental factors contributing
to its aetiology. Low birth weight, traumatic brain injury during childhood, exposure to infections, use of tobacco and alcohol pre-natally, can predispose to development of ADHD. Individuals with ADHD exhibit differences in the size and function of certain areas of brain, particularly the inhibitory centres in the frontal region. There is also an inherited deficit in dopaminergic function that makes it more difficult for individuals with ADHD to control their impulses and filter out distractions.

**The symptoms**

Individuals with ADHD present a mix of symptoms of hyperactivity, impulsivity and distractibility. Some individuals exhibit significant impulsivity and hyperactivity, while others primarily exhibit distractibility and disorganisation.

ADHD has a profound impact on the lives of adults. They may exhibit problems with inattention, which manifests as disorganisation, forgetfulness, unreliability, difficulty in planning and/or completing tasks.

Older adults with ADHD primarily exhibit symptoms of distractibility and disorganisation at home and in work-related areas. For example, they may forget to pay bills, miss appointments or tasks, lose items, and exhibit carelessness whilst driving. Difficulties in relationships with peers and family members can be evident in the form of marital discord, inconsistent relationships and few friends.

**The diagnosis**

Various diagnostic systems exist. However, the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) requires the presence of symptoms prior to seven years of age.

The current diagnostic tools ICD-10 and DSM-IV-TR are orientated towards diagnosing ADHD in children. However, in older people there are no similarly validated tools.

The consensus approach towards diagnosis of ADHD in older adults is a clinical decision based on unstructured interview to gather a comprehensive history along with collateral information about development, school and work performance, relationships, psychiatric history and family history.

Diagnosis can be complicated because of the varying nature of symptoms, comorbidities like depression, anxiety, substance abuse, personality disorders and major life events (e.g. divorce or loss of job).

In older people, diagnosis can be further complicated by the presence of cognitive impairment.
How prevalent is ADHD among older adults?

According to a Dutch study, almost 3% of over 60s have ADHD; the disorder does not fade away in adulthood. This study found that 2.8% of the 231 participants had syndromatic ADHD (6 or more symptoms of inattention and/or hyperactivity-impulsivity in a 6 month period) while 4.2% presented with symptomatic ADHD (at least 4 symptoms of inattention and/or hyperactivity-impulsivity in 6 months).

Literature search

There are very few studies and informal articles that mention ADHD in older people. Most studies are based on children or adults and one study that mentions ‘the elderly’ has a study sample with a mean age of 66 years.

My literature search yielded the following studies:

<table>
<thead>
<tr>
<th>Study/Article</th>
<th>Diagnostic criteria used to identify patients</th>
<th>Comments/findings</th>
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<tbody>
<tr>
<td>1. Guldberg-Kjar and Boo Johansson (2009)</td>
<td>Old people reporting childhood AD/HD symptoms: Retrospectively self-rated AD/HD symptoms in a population-based Swedish sample aged 65–80</td>
<td>25-item Wender Utah Rating Scale (WURS) was administered</td>
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<tr>
<td>2. Golimstok et al (2011)</td>
<td>Previous adult attention-deficit and hyperactivity disorder symptoms and risk of Dementia with Lewy Bodies (DLB): a case-control study</td>
<td>The DSM-IV criteria adapted for the identification of adult patients with ADHD and validated to Spanish Wender Utah Rating Scale were used to identify individuals with preceding ADHD symptoms during their adult life</td>
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</tbody>
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### 3. Fischer et al (2012)

**The Identification and Assessment of Late-Life ADHD in Memory Clinics**

Questionnaire to Memory Clinics to ascertain whether they identified ADHD in Memory Clinics to any extent.

Half the memory clinics that responded reported seeing ADHD patients, either identifying previously diagnosed cases and/or newly diagnosing ADHD. One fifth of clinics reported screening regularly for ADHD. Few clinics described accessing collateral informants to establish the diagnosis.


**ADHD burden of illness in older adults: a life course perspective**

No mention of diagnostic criteria

Older adults’ Quality of Life measured by accumulative negative impact of ADHD symptoms/impairments on their professional, economic, social, and emotional well-being.


**Prevalence of ADHD in older adults in the Netherlands**

1. Screening questionnaire by Barkley et al

2. Diagnostic Interview for ADHD in Adults, second edition (Diagnostisch Interview Voor ADHD bij volwassenen, DIVA 2.0) a modified structured interview

60-94 years. Tools not validated for older adults. Estimated prevalence rates in older adults: syndromatic ADHD, 2.8%; symptomatic ADHD, 4.2%. People aged 60-70 years reported significantly more ADHD symptoms than those aged 71-94 years.

### Treatment

ADHD symptoms in adults show the same responsiveness to stimulant and non-stimulant medications as that seen in children. However, no studies could be found regarding treatment options for ADHD specifically in older people.
For an elderly person with ADHD, how successful will treatment be?
We know from research that stimulant medications appear to be the most helpful for treating ADHD. However, patients with cardiac conditions like severe arrhythmias, hypertension and cardiomyopathy are not suitable for this treatment. Early research indicates that methylphenidate, a drug prescribed for adult ADHD, may help prevent falls in older people and in patients with Parkinson's disease. Although this study was too small to warrant the widespread prescription of methylphenidate, results suggest that treating cognitive defects associated with ageing and diseases like ADHD may decrease falls in the elderly.

Prognosis
Little evidence based data exists. ADHD is associated with cognitive impairment and this may compound other cognitive impairments like difficulty with working memory, executive function and other aspects of cognition which develop in older people. The combination may have worse prognosis than either alone.

Discussion
Diagnosing ADHD is more complex in older people for several reasons. While there is general agreement that ADHD can be reliably diagnosed in children through the use of the formal diagnostic criteria, validity of specific diagnostic tools in elderly people is reduced. ADHD symptoms may diminish over time and the ADHD clinical profile may increase in heterogeneity with age, rendering it harder to recognise in older patients. It requires careful consideration of differential diagnoses such as depression, bipolar disorder, generalised anxiety disorder, personality disorder, substance misuse and dementia. Typical sources of collateral information may be unavailable for older people e.g. school reports. Symptoms may also be misattributed to age-related cognitive decline.

Conclusion
ADHD in older people may be associated with psychiatric co-morbidities and therefore it is possible that social and economic costs of caring for this population may increase. ADHD does not disappear in adulthood and thus, there is a need to understand the presentation and impact of ADHD in later life. This should include developing age-appropriate approaches and assessment tools to aid diagnosis and treatment.
References


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4. World Health Organization, *ICD-10 Classification of Mental and Behavioural Disorders* (1992)

   Accessed 20 July 2013


13. Hausdorff J. *Alleviating the Fear of Falling*. University of Tel Aviv  (2008)


