illness, because there may be varying periods of duration of untreated psychosis and this can have its own treatment implications. Despite these shortcomings, findings of the study suggest that even with a national healthcare system in place and the wider dissemination of treatment guidelines, there is still only a modest impact of these on real clinical practice. The possible effect of treatment guidelines is reflected by the fact that today patients receive fewer trials of other antipsychotics (2.8 *v*. 4 trials) before being started on clozapine compared with earlier studies.[2]

1 Howes OD, Vergunst F, Gee S, McGuire P, Kapur S, Taylor D. Adherence to treatment guidelines in clinical practice: study of antipsychotic treatment prior to clozapine initiation. *Br J Psychiatry* 2012; **201**: 481–5.

2 Taylor DM, Young C, Paton C. Prior antipsychotic prescribing in patients currently receiving clozapine: a case note review. *J Clin Psychiatry* 2003; **64**: 30–4.

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Authors' reply: The first point raised is that the delay to clozapine initiation may not be a true reflection of the actual delay because patients may have been offered clozapine but refused it. This, of course, depends on what delay you are interested in. In our study we used the delay from the point at which treatment guidelines recommend a patient should start clozapine.[1] In our view this is the key, clinically relevant, delay. However, Sharma & Grover are right in suggesting that this delay does not necessarily mean that clinicians have delayed offering clozapine, although if this were the case it implies that it has taken on average 4 years for patients to agree to start clozapine. In practice it seems likely that there are a number of patient, clinician and service factors that may underlie the delay we observed in our study. Understanding these will be important if delays are to be reduced in the future. The availability of biomarkers for treatment resistance, as indicated by a recent study,[2] could also contribute to identifying treatment-resistant patients earlier. Sharma & Grover also rightly raise the issue that duration of untreated psychosis was not assessed in our study. Consequently, we cannot exclude the possibility that the duration of illness was in fact longer in our sample and thus that the delay to effective treatment was in fact longer.

Declaration of interest

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1 Howes OD, Vergunst F, Gee S, McGuire P, Kapur S, Taylor D. Adherence to treatment guidelines in clinical practice: study of antipsychotic treatment prior to clozapine initiation. *Br J Psychiatry* 2012; **201**: 481–5.

2 Demjaha A, Murray RM, McGuire PK, Kapur S, Howes OD. Dopamine synthesis capacity in patients with treatment-resistant schizophrenia. *Am J Psychiatry* 2012; **169**: 1203–10.

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Attention-deficit hyperactivity disorder across the lifespan

Michielsen *et al* conclude that the personality traits they call attention-deficit hyperactivity disorder (ADHD) 'do not fade or disappear in adulthood'.[1] Yet such a gradual extinction throughout life is precisely what their study proves.

The authors quote prevalences from previous studies as high as 7% in children and 4.4% in working-age adults. Their own study shows a prevalence in old age of 2.8%, with higher rates in the 60- to 70-year age group (4.0%) than in those over 70 (1.1%). In other words, there is a steady decline in the prevalence of ADHD caseness throughout life, way over and above that which could plausibly be caused by higher mortality among impulsive individuals.

These data show conclusively that, in common with many problematic personality styles, poor attention, impulsivity and hyperactivity tend to gradually lessen in intensity with age. Thus the study is further evidence that ADHD merely represents a cluster of personality traits which, given their high prevalence, cannot even be considered abnormal, rather than a disease entity.

Declaration of interest

The views expressed are those of the author and are not necessarily shared by his employer.

1 Michielsen M, Semeijn E, Comijs HC, van de Ven P, Beekman ATF, Deeg DJH, et al. Prevalence of attention-deficit hyperactivity disorder in older adults in The Netherlands. *Br J Psychiatry* 2012; **201**: 298–305.

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Michielsen *et al*,[1] while describing the background and aim of this study, mention that ADHD could lead to significant impairment in older age without providing evidence of such impairment. Certainly from clinical experience and previous studies we know that there are other mental disorders such as depressive illness, anxiety disorder and dementia which are relatively common in older age and likely to cause either similar or more severe impairment. The authors discuss this in some detail in their description of the limitations of this study but fail to consider this when drawing a conclusion about prevalence.

It is essential, according to DSM-IV criteria, for a diagnosis of ADHD to rule out any possibility of the symptoms being better accounted for by another mental disorder.[2] Unfortunately, the authors do not rule this out while studying the prevalence despite using a diagnostic instrument strongly based on the DSM-IV criteria.

Before we start diagnosing ADHD in older age groups it is important to exclude more prevalent and widely recognised mental health problems such as mild cognitive impairment and dementia. Looking at the diagnostic instrument DIVA 2.0, we can easily identify many symptoms which can be more readily explained by other more prevalent functional and organic illnesses.[3] This explains why the DIVA 2.0 (as the authors in this study rightly mention) has no evidence for its use in old age. Is retrospective data collected from an older person's recall of being inattentive or hyperactive as a child in different situations valid? More so when DSM-IV clearly advises caution for diagnosing this even in adults without any corroborating information, which was missing in this study.

We would thus suggest extreme caution before we start even suggesting the concept of ADHD in older adults and taking this

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any further. There are greater and more relevant issues in older age that need to be tackled before we start inventing any new diagnoses.

1 Michielsen M, Semeijn E, Comijs HC, Van de Ven P, Beekman ATF, Deeg DJH, et al. Prevalence of attention-deficit hyperactivity disorder in older adults in The Netherlands. *Br J Psychiatry* 2012; **201**: 298–305.

2 American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders (Fourth Edition, Text Revision) (DSM-IV-TR)*. APA, 2000.

3 Kooij JJS, Francken MH. *DIVA 2.0. Diagnostic Interview Voor ADHD in Adults bij volwassenen [DIVA 2.0. Diagnostic Interview ADHD in Adults]*. DIVA Foundation, 2010.

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Authors' reply: Braithwaite wonders why we state that 'the personality trait' ADHD does not disappear in adulthood, while in our study it seems that ADHD does gradually lessen with age. A first comment is that ADHD is not a personality trait, but a neuropsychiatric disorder. It has an early onset and symptoms do persist into adulthood. Our study aimed to assess whether this also extends into later life and we found that this was indeed the case in 2.8–4.2% of those examined. We agree that the prevalence rates found over the lifespan decrease a little and in our study we found lower prevalence rates among the oldest old. However, the prevalence rates we found are substantial and, if replicated, this would mean that ADHD is by no means limited to children or to younger adults.

Routh & Jackson rightly point out some limitations of the paper. The first point is that we did not rule out any other DSM-IV diagnosis, and the second pertains to the limited validity of recollecting childhood memories in old age. We agree that both points are important and have discussed them in the Discussion of the paper. A third point is that according to Routh & Jackson we have found no evidence of impairment of ADHD in old age, which might be taken as evidence of limited validity of our measurement of ADHD. Only few studies have been conducted in older adults with ADHD and those studies did find impairments.[1–3] In our study, those diagnosed with ADHD did report lifelong impairment in four of the five areas of functioning assessed, which is substantially more than DSM-IV requires for the diagnosis.[4]

We agree that other psychiatric disorders may explain impairment and that the study would have been stronger if psychiatric comorbidity had been assessed. However, as the diagnosis of ADHD requires not only a current but a lifelong history of the typical symptoms, we think we have been able to discriminate from disorders with a later onset. Mild cognitive decline or dementia is indeed very impairing and an important health problem in older age. Although we did not diagnose these disorders, we did exclude respondents with a low score and/or persistent cognitive decline on the Mini Mental State Examination. Except for three excluded persons, all respondents were able to answer the questions of the interview. Therefore it is very unlikely that respondents with dementia were included in our study.

The conclusion that 'there are greater and more relevant issues in older age that need to be tackled before we start inventing any new diagnoses' seems ill founded. We agree that it is wise to be conservative in proposing new psychiatric diagnoses which may add to the ever increasing numbers of patients eligible for mental health treatments. However, ADHD is not a new diagnosis and it is extremely unlikely that it ceases to be active at any particular age.

1 Henry E, Jones SH. Experiences of older adult women diagnosed with attention deficit hyperactivity disorder. *J Women Aging* 2011; **23**: 246–62.

2 Brod M, Schmitt E, Goodwin M, Hodgkins P, Niebler G. ADHD burden of illness in older adults: a life course perspective. *Qual Life Res* 2012; **21**: 795–9.

3 Kooij JJS, Buitelaar JK, Van den Oord EJ, Furer JW, Rijnders CAT, Hodiamont PPG. Internal and external validity of attention-deficit hyperactivity disorder in a population-based sample of adults. *Psychol Med* 2005; **35**: 817–27.

4 Michielsen M, Semeijn E, Comijs HC, Van de Ven P, Beekman ATF, Deeg DJH, et al. Prevalence of attention-deficit hyperactivity disorder in older adults in The Netherlands. *Br J Psychiatry* 2012; **201**: 298–305.

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Corrections

Dementia in the acute hospital: prospective cohort study of prevalence and mortality. *BJP*, **195**, 61–66. Table 3 (p. 64), last row, variable should read: Death within 14 days of index admission ($n = 75$), %.

Karl Jaspers – reflection (extra). *BJP*, **202**, 4. The doi is: 10.1192/bjp.bp.112.112334. The online version has been corrected in deviation from print and in accordance with this correction.

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