



## Diagnosis of ADHD in Intellectual Disability: DSM V versus Clinical Impression

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### Abstract

#### Background:

Diagnosing ADHD in people with ID remains challenging. ADHD diagnosis is based on the criteria of the DSM V classification system; however, the presence of ID and other disorders such as autism and communication difficulties can make it difficult to apply the DSM V criteria of ADHD in people with ID who lack verbal communication skills. Diagnoses are often made using clinical judgment and/or application of diagnostic criteria. There are no studies looking at the diagnostic accuracy of clinical judgment vs use of DSM V criteria in people with ID and ADHD.

#### Method:

The aims of the study were to compare the accuracy of the diagnosis of ADHD in people with ID according to the DSM V criteria versus clinical judgement, and to determine which criteria are more reliable. A questionnaire was developed using five fictional case scenarios of people with ID. Questionnaires were presented to practising psychiatrists chosen as a convenience sample in the UK over a period of 12 months. Case scenarios were developed and agreed to be positive or negative for ADHD by the study authors prior to rating by clinicians. The clinicians were asked to read the scenarios and to make a judgement on the cases with regard to the symptoms of ADHD. They were then presented with the 18 DSM V criteria of ADHD and asked to select the criteria they considered were present in each scenario. Sensitivity, specificity, likelihood ratios and predictive values for both the DSM V criteria and clinical opinions were calculated for correctly identifying the exemplar cases.

#### Results:

The data showed strong sensitivity (0.82 95% CI 0.74-0.89) and perfect specificity (1.00 95% CI 0.95-1.00) for the raters' clinical opinion evident from there not being a single false positive

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3 diagnosis using this. In contrast, the DSM V criteria, as assessed by the raters, did not reliably  
4 provide ADHD diagnoses, with a sensitivity of only 0.23 (95% CI 0.15-0.31). This difference in  
5 sensitivity between the two was statistically significant at  $p < 0.001$ . Specificity was strong with  
6 the DSM V criteria but at 0.99 (95% CI 0.93-1.00) that differed significantly from raters' clinical  
7 opinion ( $p=1$ ).  
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### 16 **Conclusion:**

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18 The study results suggest that clinical opinion should be the 'gold standard' in diagnosing  
19 ADHD in adults with intellectual disability in the absence of a validated diagnostic tool in this  
20 group. Further studies are needed to understand how symptoms of ADHD can be presented  
21 differently in people with ID. DSM V criteria for ADHD may need to be adapted according to  
22 the severity of ID and other neurodevelopmental disorder which can change the clinical  
23 presentation.  
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33 **Key words:** ADHD, intellectual disability, classification  
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## Diagnosis of ADHD in Intellectual Disability: DSM V versus Clinical Impression

### Introduction

Attention deficit hyperactivity disorder (ADHD) is a neurodevelopmental disorder with a prevalence of 4-5% in the general population (Polanczyk, de Lima, Horta, Biederman, & Rohde, 2007). In people with intellectual disabilities (ID), ADHD has a significantly higher prevalence estimated at between 3 and 10 times the rate in the normal child and adolescent population (Emerson, 2003; Neece, Baker, Crnic, & Blacher, 2013). The true prevalence of ADHD in people with ID is not currently known. Reilly and Holland reported that prevalence rates of ADHD symptoms in people with ID vary significantly depending on the instruments and diagnostic practices employed (Reilly & Holland, 2011). There is no gold standard reference test for diagnosis of ADHD in this population (citation removed for blind review).

### *Diagnosis*

Diagnosing ADHD in people with ID remains challenging, with sparse research in this area (citation removed for blind review). Diagnosis is based on the criteria of the DSM V classification system that requires the presence of inattention, and/or hyperactivity, and impulsivity prior to the age of 12 years (American Psychiatric Association, 2013). In adults, 5 or more symptoms of inattention and/or hyperactivity for more than 6 months causing a functional impairment in more than one setting are required (American Psychiatric Association, 2013). Diagnosis of ADHD is considered controversial by some authors (Saul, 2014), but studies have shown that ADHD is a valid diagnosis in people with and without ID (Jensen, 2000).

Making a diagnosis can be compounded by diagnostic overshadowing (Reiss, Levitan, & Szyszko, 1982) where hyperactive, impulsive, and symptoms of inattention are attributed to the ID rather than to ADHD. Moreover, clinicians may lack confidence in making the diagnosis because of difficulties in establishing whether activity and attention levels are consistent or not

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3 with the developmental stage of the person (Xenitidis, Paliokosta, Rose, Maltezos, &  
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5 Bramham, 2010).  
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9 The presence of other disorders such as autism and communication difficulties can make it  
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11 difficult to apply the DSM V criteria of ADHD in people with ID who lack verbal communication  
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13 skills (citation removed for blind review) and therefore their applicability in people with ID with  
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15 limited verbal communication skills is questionable.  
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### 19 20 *Assessment tools*

21  
22 There is a lack of diagnostic tools to specifically assess ADHD symptomatology in children  
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24 and adolescents with ID. The difference between ADHD and behaviour consistent with ID is  
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26 often based on clinical judgement (citation removed for blind review). This raises the question  
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28 whether clinical judgment is the gold standard compared to other diagnostic methods. Clinical  
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30 judgement has been shown to be superior to structured assessments using diagnostic criteria.  
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32 A study in dementia in ID has shown that clinical judgment was superior to DSM V in  
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34 diagnosing dementia in people with Down Syndrome (Sheehan et al., 2015). The DIVA-5-ID  
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36 questionnaire helps in diagnosing ADHD in ID but has not been validated in clinical studies in  
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38 people with ID (Kooij et al., 2019).  
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43 The paucity of structured or validated tools to assist the diagnosis of ADHD in adults with ID  
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45 could mean that adults with ID and ADHD often remain undiagnosed and untreated. Under-  
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47 diagnosis is problematic because ADHD in adults with ID may have a more severe  
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49 presentation and an uneven and less favourable pattern of improvement across the lifespan  
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51 in comparison with adults without ID (Xenitidis et al., 2010). Rose and colleagues  
52  
53 demonstrated that individuals with co-morbid ADHD and intellectual disability may be  
54  
55 vulnerable to a 'double deficit' from both disorders in certain aspects of cognitive functioning  
56  
57 (Rose, Bramham, Young, Paliokostas, & Xenitidis, 2009).  
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### *Aims*

In this study, the aims are to compare the accuracy of the diagnosis of ADHD in people with ID according the DSM V criteria versus clinical judgment and if so, to determine which criteria are more reliable.

### **Materials and Methods**

A questionnaire was developed using five fictional case scenarios of people with ID. The case scenarios were developed by clinical experts in the diagnosis of ADHD in patients with ID. Of the 5 cases, three had a diagnosis of ADHD that were intended to be clear, uncomplicated descriptions of the disorder. The other two cases described people who clearly did not have ADHD. All cases included the relevant information that would be expected in a standard psychiatric assessment of ADHD. The questionnaire, with cases correctly identified, is available in the appendix.

### *Participants*

Questionnaires were presented to practising psychiatrists chosen as a convenience sample in the UK over a period of 12 months.

### *Index tests*

The clinicians were asked to read the scenarios and to make a judgement on the cases with regard to the symptoms of ADHD. They were then presented with the 18 DSM V criteria of ADHD and asked to select the criteria they considered were present in each scenario. The criteria they selected were later summed by the study team into the relevant categories to determine a diagnosis of ADHD as per DSM V.

### *Reference standard*

Case scenarios were developed and agreed to be positive or negative for ADHD by the study authors prior to rating by clinicians. This assignment by the study authors was taken as the

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3 reference standard. Clinicians were not aware of the correct diagnosis prior to submitting their  
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5 questionnaire.  
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### 8 9 *Supplementary information*

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11 Anonymised information about the clinicians was also collected that included specialisation in  
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13 ID, and the number of years of clinical experience and level of training. This study has been  
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15 reported according to the STARD 2015 guidelines for diagnostic accuracy studies (Cohen et  
16  
17 al., 2016).  
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### 20 21 22 *Statistical Analysis*

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24 Sensitivity, specificity, likelihood ratios and predictive values for both the DSM V criteria and  
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26 clinical opinions were calculated for correctly identifying the exemplar cases. These are given  
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28 with their 95% confidence intervals (CIs). McNemar's test was used to assess if any observed  
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30 differences between the tests were statistically significant with the alpha threshold set at <0.05.  
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32 Fleiss's Kappa was used to assess the inter-rater reliability of the two index tests with  
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34 thresholds of agreement set at the levels reported by Landis and Koch (Landis & Koch, 1977).  
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39 Analysis was conducted using R for Windows 3.5.2 (R Foundation, Vienna, Austria) with the  
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41 irr (0.84.1) and epiR (0.9-99) packages.  
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### 44 45 *Ethical Approval*

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47 This study was registered with the Research and Development Department of the local NHS  
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49 Trust which determined that no ethical approval was necessary.  
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### 52 53 **Results**

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55 Thirty-seven clinicians completed the questionnaire of whom 36 were psychiatrists holding a  
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57 professional qualification e.g. MRCPsych. 32 (86%) of the clinicians were specialists in the  
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59 Psychiatry of Intellectual Disability. All the clinicians who were not specialists in ID reported  
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3 seeing people with ID regularly (minimum one patient with ID every week). One clinician  
4 worked mainly with children, 34 worked with adults, one with both adults and children, and  
5 one did not answer.  
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11 The diagnoses made by the participants using their clinical judgement and the DSM V criteria  
12 are shown in tables 1 and 2 respectively. The performance characteristics for each test are  
13 shown in table 3. There were no indeterminates or missing data.  
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20 The data showed strong sensitivity (0.82 95% CI 0.74-0.89) and perfect specificity (1.00 95%  
21 CI 0.95-1.00) for the raters' clinical opinion evident from there not being a single false positive  
22 diagnosis using this. In contrast, the DSM V criteria, as assessed by the raters, did not reliably  
23 provide ADHD diagnoses, with a sensitivity of only 0.23 (95% CI 0.15-0.31). This difference in  
24 sensitivity between the two was statistically significant at  $p < 0.001$ . Specificity was strong with  
25 the DSM V criteria but at 0.99 (95% CI 0.93-1.00) that differed significantly from raters' clinical  
26 opinion ( $p = 1$ ).  
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### 36 *Inter-rater reliability*

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38 Fleiss's Kappa for clinical opinion was 0.919 ( $p < 0.001$ ) and 0.415 ( $p < 0.001$ ) for raters  
39 selecting the same DSM V criteria. These indicate 'almost perfect' and 'moderate' agreement  
40 respectively, as per the *a priori* criteria (Landis & Koch, 1977).  
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### 46 *Analysis of individual DSM V criteria*

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48 Table 4 indicates the percentage of raters who selected each DSM V criterion in both the  
49 positive and negative cases. A2, A8, H1, and H5 were the most commonly selected DSM V  
50 criteria in positive cases and the only criteria selected by the majority (>50%) of raters in the  
51 positive cases.  
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## Discussion



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3 There has been increasing research into the diagnosis of ADHD along with advances in  
4 pharmacological and non pharmacological strategies to reduce functional impairment  
5 secondary to it. However, the diagnosis of ADHD in people with Intellectual disabilities has not  
6 received much attention in literature. The diagnosis of Attention Deficit Hyperactivity Disorder  
7 (ADHD) can be challenging for people with intellectual disability (ID). There can be diagnostic  
8 overshadowing where hyperactive, impulsive and inattentive symptoms are attributed to the  
9 ID rather than to the ADHD; moreover, clinicians may lack confidence to make a diagnosis of  
10 ADHD in patients with ID and may have difficulty to establish whether activity and attention  
11 levels are consistent or not with the developmental stage of the individual (Xenitidis et al.,  
12 2010).

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26 The underdiagnosis of ADHD in patients with ID is problematic, particularly as it has been  
27 shown that ADHD in adults with ID may have a more severe presentation and an uneven and  
28 less favourable pattern of improvement across the lifespan in comparison with adults without  
29 ID (Xenitidis et al., 2010). Moreover, it has been shown that adolescents with ID continue to  
30 be at elevated risk for ADHD (risk ratio: 3.38:1) compared to their typically developing peers  
31 (Neece et al., 2013). The true prevalence of ADHD in people with ID is not currently known; a  
32 review reported that prevalence rates of ADHD symptoms in individuals with intellectual  
33 disability vary significantly depending on instruments and diagnostic practices employed  
34 (Reilly & Holland, 2011). The findings of a review by Antshel and colleagues showed that  
35 ADHD is a valid psychiatric condition in children with ID, but the positive predictive power and  
36 negative predictive power of ADHD symptoms in this population remain an open question  
37 without knowing the base rates of ADHD (Antshel, Phillips, Gordon, Barkley, & Faraone,  
38 2006).

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56 There is currently no clear guidance as to how ADHD should be assessed in an individual with  
57 ID, meaning that at present the assessment is the same as the general population. Moreover,  
58 the presence of other disorders such as autism and communication difficulties can make it  
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3 difficult to apply the DSM V criteria of ADHD inattention and hyperactivity/impulsivity in people  
4 with ID (citation removed for blind review). For example, certain criteria are applicable for  
5 people with verbal communication, therefore their applicability in people with ID who have  
6 limited verbal communication skills can be questioned.  
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13 There is a lack of scales to specifically assess ADHD symptomatology in children and  
14 adolescents with ID. Recently, Freeman and colleagues developed the Scale of Attention in  
15 Intellectual Disability (SAID) which is a teacher-completed measure (Freeman, Gray, Taffe, &  
16 Cornish, 2015). A study applied this scale to 176 children with autism spectrum disorder  
17 (ASD), Down Syndrome (DS), or idiopathic ID (Freeman, Gray, Taffe, & Cornish, 2016). The  
18 results showed that that children with ASD had a significantly greater breadth of  
19 hyperactive/impulsive behaviours than those with DS or idiopathic ID, meaning that there can  
20 be differences in ADHD symptoms across diagnostic groups.  
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32 Similarly, there are no validated tools to screen and/or diagnose ADHD in adults with ID. This  
33 means that the distinction between ADHD and behaviour consistent with ID often has to be  
34 made by an experienced clinician's judgement (citation removed for blind review). This raises  
35 the question whether clinical judgment is the gold standard compared to other diagnostic  
36 methods. Sanders et al. (2015) in the systematic review of studies comparing diagnostic  
37 clinical prediction rules with clinical judgment showed that clinical judgment is often superior  
38 to others (Sanders, Doust, & Glasziou, 2015). Similar findings have been reported in studies  
39 looking at the accuracy of clinical judgment vs use of standard diagnostic tools such as DSM  
40 or ICD in diagnosing dementia in people with Downs syndrome (Sheehan et al., 2015).  
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53 The lack of structured or validated tools to assist the diagnosis of ADHD in adults with ID could  
54 mean that adults with ID and ADHD often remain undiagnosed and untreated. The DIVA-5- ID  
55 was recently produced to help with the diagnosis of ADHD in people with ID. However, there  
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3 is a need to ensure that the applicability of ADHD diagnostic criteria in people with cognitive  
4 impairments is robust and involves the use of validated and reliable assessment tools.  
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### 10 11 *What the study tells us*

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13 The study compared the validity and reliability of clinicians' opinion with the DSM V criteria in  
14 diagnosing ADHD in adults with intellectual disabilities. The sensitivity of clinical opinion was  
15 0.82, in other words, the use of clinical opinion can diagnose 82 out of 100 people with the  
16 diagnosis of ADHD. This reduced to 23 out of 100 (0.23) people with ADHD using the DSM V  
17 diagnostic criteria. Both clinical opinion and DSM V criteria had high specificity, that is, if  
18 someone with ID does not have ADHD, the accuracy of combined clinical opinion and DSM V  
19 criteria in correctly detecting ADHD was almost 100%. The high specificity could be due to  
20 multiple factors for example, clinicians' ability to detect correctly the absence of ADHD. It could  
21 also be explained by clinicians' lack of awareness or skills in diagnosing ADHD. Clinical  
22 opinion had high inter-rater reliability compared with the inter-rater reliability using DSM V. The  
23 results demonstrate that using clinical opinion when diagnosing ADHD in ID demonstrated  
24 high sensitivity and inter-rater reliability.  
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41 Positive and negative predictive values can be helpful to further identify the strength of two  
42 diagnostic methods. Positive predictive value, the proportion of people who are positive for a  
43 test when they actually have that condition, was high for both clinical opinion and application  
44 of DSM V criteria. This suggests that diagnosis of ADHD based on clinical opinion or DSM V  
45 criteria, is likely to be accurate in the person with ID. The negative predictive value for clinical  
46 opinion was 0.76 suggesting that if the clinical opinion is that the person does not have ADHD,  
47 only 76% of cases do not have ADHD. It was lower at 46% when DSM V Criteria were applied.  
48 This raises the question about how confidence in clinical opinion and DSM V criteria can be  
49 raised when ruling out the diagnosis of ADHD.  
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3 Applying DSM V criteria in people with ID has been debated (citation removed for blind review).  
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5 This study revealed that 4 out of 18 DSM V diagnostic criteria were used more often by  
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7 clinicians when diagnosis of ADHD was given. These were 'inability to sustain attention' (A2),  
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9 'distractibility' (A8), 'inability to sit in one place for longer' (H2) and 'often on the go' (H5). It is  
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11 likely that they relied on these symptoms because of the difficulty on relying on higher  
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13 intellectual functioning such as communication in people with ID. The DSM V criteria that were  
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15 used least were 'loosing things' (A7), 'forgetful in daily activities' (A9), 'talking excessively'  
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17 (H6), 'often blurt out answers' (H7) and 'interrupt or intrude on others' (H9). These criteria rely  
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19 on a person possessing a higher level of functioning and that may explain why they were used  
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21 less often. This highlights the issue in diagnosing ADHD in people with ID using standard DSM  
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23 V criteria. Unless the standard criteria are adapted for the group of people with ID with a range  
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25 of intellectual functioning and adaptive behaviours, under diagnosis of ADHD in ID will  
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27 continue to be a challenge.  
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### 32 *Strengths and Limitations*

34 This study methodology used realistic case scenarios to simulate the diagnosis of ADHD in  
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36 people with ID. Data was collected prospectively and with no missing data or indeterminates.  
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38 Clinicians were blinded to the reference standard when rating each case scenario and  
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40 conversely, authors assigned the correct diagnosis for each case *a priori*, before the start of  
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42 the study and hence without knowledge of index test values. There was a relatively large  
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44 number of raters in this study that gave a precise estimate for inter-rater reliability.  
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49 It could be argued that the reference test used, the correct diagnosis assigned by the authors,  
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51 is subjective and not a true gold standard for the diagnosis but there is no validated and  
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53 accepted gold standard for ADHD in people with ID. All psychiatric diagnostic tools have a  
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55 degree of subjectivity in their interpretation as they are conducted by interview and/or survey  
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57 of people and informants.  
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3 This study had a small number of cases resulting in imprecise estimates of performance  
4 characteristics. Diagnosis of ADHD involves clinical interview with the person with ID and  
5 possibly observations when diagnosis is not clear. Raters did not meet the person with ID.  
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7 Therefore, the diagnosis of ADHD was purely based on case scenarios given to them which  
8 is only part of the diagnostic assessment. Therefore it can be argued that this method does  
9 not fully replicate the clinical judgment and application of DSM V criteria.  
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### 18 *Implications for practice*

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20 The study speculates on applying DSM V criteria in clinical practice in diagnosing ADHD in  
21 people with ID. It suggests that clinical opinion should be the 'gold standard' in diagnosing  
22 ADHD in adults with intellectual disability in the absence of a validated diagnostic tool in this  
23 group. DSM V criteria for ADHD may need to be adapted in people with ID. Currently, there is  
24 no clear guidance on assessing ADHD in people with ID relying on criteria applied in the  
25 general population that might not be sensitive in intellectual disabilities. It is important to  
26 explore ADHD symptoms in people with ID and how they can present differently compared to  
27 their peers without ID. Further research is needed to understand the symptoms of ADHD in  
28 people with ID in order to improve the diagnostic process.  
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|                              | <b>ADHD</b> | <b>No ADHD</b> | <b>Totals</b> |
|------------------------------|-------------|----------------|---------------|
| Positive Clinical<br>Opinion | 91          | 0              | 91            |
| Negative Clinical<br>Opinion | 20          | 74             | 94            |

**Table 1** - Clinical opinion in diagnosing ADHD

|                |          | <b>ADHD</b> | <b>No ADHD</b> | <b>Totals</b> |
|----------------|----------|-------------|----------------|---------------|
| DSM V Criteria | Positive | 25          | 1              | 26            |
|                | Negative | 86          | 73             | 159           |

**Table 2** - DSM V Criteria in diagnosing ADHD

|                                    | Clinical Opinion | DSM V Criteria      | p-value |
|------------------------------------|------------------|---------------------|---------|
| Sensitivity (95% CI)               | 0.82 (0.74-0.89) | 0.23 (0.15-0.31)    | <0.001  |
| Specificity (95% CI)               | 1.00 (0.95-1.00) | 0.99 (0.93-1.00)    | 1       |
| Positive Predictive Value (95% CI) | 1.00 (0.96-1.00) | 0.96 (0.80-1.00)    | -       |
| Negative Predictive Value (95% CI) | 0.79 (0.69-0.86) | 0.46 (0.38-0.54)    | -       |
| Positive Likelihood Ratio (95% CI) | Inf              | 16.67 (2.31-120.35) | -       |
| Negative Likelihood Ratio (95% CI) | 0.18 (0.12-0.27) | 0.79 (0.71-0.87)    | -       |

**Table 3-** Performance characteristics of Clinical Opinion and DSM V Criteria in diagnosing ADHD

| DSM V Criterion | Percentage selected in positive cases | Percentage selected in negative cases |
|-----------------|---------------------------------------|---------------------------------------|
| A1              | 19.8                                  | 0.0                                   |
| <b>A2</b>       | <b>85.6</b>                           | 8.1                                   |
| A3              | 28.8                                  | 2.7                                   |
| A4              | 35.1                                  | 4.1                                   |
| A5              | 22.5                                  | 1.4                                   |
| A6              | 18.9                                  | 2.7                                   |
| A7              | 1.8                                   | 0.0                                   |
| <b>A8</b>       | <b>62.2</b>                           | 5.4                                   |
| A9              | 2.7                                   | 0.0                                   |
| H1              | 48.6                                  | 1.4                                   |
| <b>H2</b>       | <b>77.5</b>                           | 17.6                                  |
| H3              | 12.6                                  | 2.7                                   |
| H4              | 21.6                                  | 1.4                                   |
| <b>H5</b>       | <b>69.4</b>                           | 5.4                                   |
| H6              | 5.4                                   | 0.0                                   |
| H7              | 4.5                                   | 1.4                                   |
| H8              | 30.6                                  | 16.2                                  |
| H9              | 9.0                                   | 2.7                                   |

**Table 4-** Performance of individual DSM V criteria

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## Appendix

### **Research Study: Diagnosing ADHD in Intellectual Disability population**

Background: The diagnosis of mental disorder is made either by overall clinical impression or use of diagnostic criteria such as DSM V. This study aims to look at both diagnostic processes when diagnosing ADHD in ID population.

**Task: There are 5 case scenarios. Please read all scenarios and decide if you think the patient is likely to have ADHD or not.**

**There are 18 criteria listed after each scenario. Depending on the information available, please tick the criteria which are present in each case scenario.**

#### **Case 1- ADHD +ve**

Sam is a 19 year old male with moderate to severe intellectual disabilities and Autism. He lives with his parents. He attends college on 5 days a week. He suffers from a moderate level of anxiety which affects his daily functioning.

Sam has strict daily routines. He can become more anxious and challenging when he has not got structured activities. He was described as 'being stubborn at times'. He sometimes refuses to engage in activities even though he knows that he should. This can lead to difficult

behaviours. His parents and carers help him with most activities of daily living. All activities are planned for him. They make sure that he attends his activities.

When he is at college, he cannot sit in one place for long. He gets up and walks around most of the time. College tutors say that he does not pay attention to work. If someone sits with him, he can focus a bit longer. Sam can be loud most of the time during the day. He is always walking around and doing various activities. His mother says that at home he cannot sit still in one place for long. He finds it very hard to sit at the dinner table. He will be the first one to finish the meal as quickly as he can and to walk away. He finds it hard to do long train journeys. When his carers book train journeys, they break the journey a few times so he can get out of the train and catch the next train because it is hard for him to stay on one train for long. He is describes as 'fidgeting' most of the time. Most of these difficulties have been present since childhood.

**In my clinical opinion, with the information available, Sam is:**

1. likely to have ADHD - YES
2. unlikely to have ADHD

**Please tick the following criteria that apply to Sam**

| No. | Criteria   | Present |
|-----|--|---------|
| 1.  | Often fails to give close attention to details or makes careless mistakes in school work or at work  |         |
| 2.  | Often has difficulty sustaining attention in tasks or play activities  |         |
| 3.  | Often does not appear to listen or mind seems elsewhere even in the absence of any obvious distraction                                       |         |
| 4.  | Often struggles to follow through on instructions and fails to finish work, chores, or duties  |         |
| 5.  | Often has difficulty with organizing tasks and activities  |         |
| 6.  | Often avoids, dislikes, or is reluctant to engage in tasks requiring a lot of thinking e.g. school work, completing forms, preparing reports |         |
| 7.  | Often loses things   |         |
| 8.  | Often is easily distracted   |         |
| 9.  | Often forgetful in daily activities  |         |
|     |  |         |
| 1   | Often fidgets with hands or feet or squirms in chair   |         |
| 2   | Often finds it difficult to remain seated  |         |
| 3   | Often runs about or climbs in situations that are not appropriate  |         |
| 4   | Often unable to play or engage quietly in leisure activities   |         |
| 5   | Often 'on the go', acts as if 'driven by a motor'  |         |
| 6   | Often talks excessively  |         |
| 7   | Often blurts out answers before questions have been completed  |         |
| 8   | Often difficulty in waiting or taking turns  |         |

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|---|--|--|
| 9 | Often interrupts or intrudes on others |  |
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### Case 2- ADHD -ve

David is a 43 year old man with moderate ID. He lives in a residential home. His behaviour can be challenging episodically. This includes pacing up and down, not sitting in one place for long and verbal aggression. He can become impulsive in his behaviour. He finds it hard to wait his turn. His mood appears irritable. This presentation can last for up to 1-2 weeks. During these periods of agitation, he struggles to go to sleep and is resists personal care. His behaviour then gradually reduces and remains calm without agitated behaviour for 2-3 weeks. During this period, he is compliant, relaxed, sleeps well, and engages with staff without behavioural difficulties. This pattern of behaviour most likely started about 20 years ago.

#### In my opinion, with the information available, David is:

1. likely to have ADHD
2. unlikely to have ADHD - YES

#### Please tick the following criteria that apply to David

| No. | Criteria   | Present |
|-----|--|---------|
| 1.  | Often fails to give close attention to details or makes careless mistakes in school work or at work  |         |
| 2.  | Often has difficulty sustaining attention in tasks or play activities  |         |
| 3.  | Often does not appear to listen or mind seems elsewhere even in the absence of any obvious distraction                                       |         |
| 4.  | Often struggles to follow through on instructions and fails to finish work, chores, or duties  |         |
| 5.  | Often has difficulty with organizing tasks and activities  |         |
| 6.  | Often avoids, dislikes, or is reluctant to engage in tasks requiring a lot of thinking e.g. school work, completing forms, preparing reports |         |
| 7.  | Often loses things   |         |
| 8.  | Often is easily distracted   |         |
| 9.  | Often forgetful in daily activities  |         |
|     |  |         |
| 1   | Often fidgets with hands or feet or squirms in chair   |         |
| 2   | Often finds it difficult to remain seated  |         |
| 3   | Often runs about or climbs in situations that are not appropriate  |         |
| 4   | Often unable to play or engage quietly in leisure activities   |         |

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| 5 | Often 'on the go', acts as if 'driven by a motor'             |  |
| 6 | Often talks excessively                                       |  |
| 7 | Often blurts out answers before questions have been completed |  |
| 8 | Often difficulty in waiting or taking turns                   |  |
| 9 | Often interrupts or intrudes on others                        |  |

For Peer Review

### Case 3- ADHD +ve

Carly is a 22 year old female with moderate intellectual disability. She lives in a residential home.

Carly has verbal and comprehensive language skills. She is described as 'more uptight' and 'more edgy' most of the time. She can target other residents by shouting at them or potential physical aggression. She has used medication such as Sertraline to manage anxiety.

Carly is hyperactive and fidgety most of the time since childhood. Staff described her as 'having got a lot of energy' and is 'always on the go'. She can be impulsive and finds it hard to wait for her turn. If some activity is suggested, she likes to do it straight away. She gets distracted easily. It is difficult to comment on her level of concentration because she finds it hard to sit and focus on one task unless a carer sits with her and gets her to focus when she gets distracted.

**In my clinical opinion, with the information available, Carly is:**

1. likely to have ADHD- YES
2. unlikely to have ADHD

**Please tick the following criteria that apply to Carly**

| No. | Criteria   | Present |
|-----|--|---------|
| 1.  | Often fails to give close attention to details or makes careless mistakes in school work or at work  |         |
| 2.  | Often has difficulty sustaining attention in tasks or play activities  |         |
| 3.  | Often does not appear to listen or mind seems elsewhere even in the absence of any obvious distraction                                       |         |
| 4.  | Often struggles to follow through on instructions and fails to finish work, chores, or duties  |         |
| 5.  | Often has difficulty with organizing tasks and activities  |         |
| 6.  | Often avoids, dislikes, or is reluctant to engage in tasks requiring a lot of thinking e.g. school work, completing forms, preparing reports |         |
| 7.  | Often loses things   |         |
| 8.  | Often is easily distracted   |         |
| 9.  | Often forgetful in daily activities  |         |
|     |  |         |
| 1   | Often fidgets with hands or feet or squirms in chair   |         |
| 2   | Often finds it difficult to remain seated  |         |
| 3   | Often runs about or climbs in situations that are not appropriate  |         |
| 4   | Often unable to play or engage quietly in leisure activities   |         |
| 5   | Often 'on the go', acts as if 'driven by a motor'  |         |
| 6   | Often talks excessively  |         |
| 7   | Often blurts out answers before questions have been completed  |         |
| 8   | Often difficulty in waiting or taking turns  |         |

|   |  |  |
|---|--|--|
| 9 | Often interrupts or intrudes on others |  |
|---|--|--|

#### Case 4- ADHD -ve

Beryl is 52 year old woman with mild LD presenting and behavioural challenges. She can be very demanding in her behaviour. Her mood is irritable at times leading to abuse towards other residents and carers. However there are times she can be happy and pleasant towards her carers. There are days when she remains calm and settled without difficulties such as sitting and watching TV. Her behaviour becomes challenging especially when her carers attend to other residents in her care home. She can refuse to do her personal care and urinates in the living room even though she is continent of urine. These behavioural difficulties have appeared over the last 2 years. The triggers for the change in her behaviour are not clear.

#### In my clinical opinion, with the information available, Beryl is:

1. likely to have ADHD
2. unlikely to have ADHD- YES

#### Please tick the following criteria that apply to Beryl

| No. | Criteria   | Present |
|-----|--|---------|
| 1.  | Often fails to give close attention to details or makes careless mistakes in school work or at work  |         |
| 2.  | Often has difficulty sustaining attention in tasks or play activities  |         |
| 3.  | Often does not appear to listen or mind seems elsewhere even in the absence of any obvious distraction                                       |         |
| 4.  | Often struggles to follow through on instructions and fails to finish work, chores, or duties  |         |
| 5.  | Often has difficulty with organizing tasks and activities  |         |
| 6.  | Often avoids, dislikes, or is reluctant to engage in tasks requiring a lot of thinking e.g. school work, completing forms, preparing reports |         |
| 7.  | Often loses things   |         |
| 8.  | Often is easily distracted   |         |
| 9.  | Often forgetful in daily activities  |         |
|     |  |         |
| 1   | Often fidgets with hands or feet or squirms in chair   |         |
| 2   | Often finds it difficult to remain seated  |         |
| 3   | Often runs about or climbs in situations that are not appropriate  |         |
| 4   | Often unable to play or engage quietly in leisure activities   |         |
| 5   | Often 'on the go', acts as if 'driven by a motor'  |         |



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|---|---|--|
| 6 | Often talks excessively                                       |  |
| 7 | Often blurts out answers before questions have been completed |  |
| 8 | Often difficulty in waiting or taking turns                   |  |
| 9 | Often interrupts or intrudes on others                        |  |

### Case 5- ADHD +ve

Maria is a 24 year old woman with moderate ID and severe Autism who has recently moved to a residential home. Staff report that it is difficult to manage her because of her challenging behaviour. She is managed with one-to-one observation because she does not stay in one place for more than a few minutes and poses risks to herself if she is left alone. She is always pacing and rarely sits in one place. When she starts to engage in activities she does not stay on the task for long and changes to a different task but most of the time will walk away from it. She has been like this since childhood. Her parents managed her behaviour when she was young but now that she has grown up, carers find it hard to manage her behaviour that can sometimes lead to challenging behaviour. There are particular triggers that increase her anxiety for example, Christmas and Easter, or when she is preparing to go home from her day service. When she is anxious, the behaviours become more challenging.

#### In my clinical opinion, with the information available, Maria is:

1. likely to have ADHD- YES
2. unlikely to have ADHD

#### Please tick the criteria that apply to Maria

| No. | Criteria   | Present |
|-----|--|---------|
| 1.  | Often fails to give close attention to details or makes careless mistakes in school work or at work  |         |
| 2.  | Often has difficulty sustaining attention in tasks or play activities  |         |
| 3.  | Often does not appear to listen or mind seems elsewhere even in the absence of any obvious distraction                                       |         |
| 4.  | Often struggles to follow through on instructions and fails to finish work, chores, or duties  |         |
| 5.  | Often has difficulty with organizing tasks and activities  |         |
| 6.  | Often avoids, dislikes, or is reluctant to engage in tasks requiring a lot of thinking e.g. school work, completing forms, preparing reports |         |
| 7.  | Often loses things   |         |
| 8.  | Often is easily distracted   |         |
| 9.  | Often forgetful in daily activities  |         |

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|---|---|--|
| 1 | Often fidgets with hands or feet or squirms in chair              |  |
| 2 | Often finds it difficult to remain seated                         |  |
| 3 | Often runs about or climbs in situations that are not appropriate |  |
| 4 | Often unable to play or engage quietly in leisure activities      |  |
| 5 | Often 'on the go', acts as if 'driven by a motor'                 |  |
| 6 | Often talks excessively   |  |
| 7 | Often blurts out answers before questions have been completed     |  |
| 8 | Often difficulty in waiting or taking turns                       |  |
| 9 | Often interrupts or intrudes on others                            |  |

**About yourself:**

1. Are you a Psychiatrist? (holding a professional qualification e.g. MRCPsych)

|     |    |
|-----|----|
| Yes | No |
|-----|----|

2. Are you a Specialist in the Psychiatry of Intellectual Disability? (CCT in Psychiatry of ID)

|     |    |
|-----|----|
| Yes | No |
|-----|----|

3. If you are not a specialist in ID, or still in training, do you regularly see people with intellectual disability? (as a minimum, one patient with ID per week)

|     |    |
|-----|----|
| Yes | No |
|-----|----|

4. How many years have you been working as a Psychiatrist?

0 – 5 years; 6 – 10 years; 11 – 15 years; 16 – 20 years; 20+ years

5. With which group do you mainly work?

|          |                  |                     |
|----------|------------------|---------------------|
| Children | Adults (over 18) | Adults and children |
|----------|------------------|---------------------|

**B. Perera - November 2016**