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Missed opportunities to prevent risk of offending in young people with ADHD – a service evaluation from a central London FCAMHS service

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ABSTRACT

This service evaluation aims to explore the needs of young people (YP) with ADHD engaging in risk behaviours. Demographic, clinical, social, and service involvement data were extracted from records of 443 YP referred to a Forensic Community CAMHS service. A sixth (74, 16.7%) had a diagnosis of ADHD. They had similar CAMHS input (55, 74.3%) compared to those with autism but many more had Youth Offending Team (YOT) involvement (22, 29.7% with ADHD; 5, 6.4% with ASC). A quarter (20, 27.8%) were in mainstream school with a fifth (13, 18.1%) out of education or training (NEET). Half (41, 55.4%) had an Education, Health, and Care Plan (EHCP). The prevalence of ADHD in YP referred and high levels of YOT input suggests missed opportunities to prevent the development of poor outcomes and criminalisation, including those not open to CAMHS and, therefore, unable to access medication, and those out of education without an EHCP.

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KEYWORDS ADHD; adolescence; forensic CAMHS

Introduction

It is increasingly recognised that ADHD (Attention Deficit Hyperactivity Disorder) is overrepresented in young people (YP) and adults in contact with criminal justice pathways (Hughes et al., 2012). Whilst the 1997 Office

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of National Statistics survey of psychiatric morbidity among prisoners in England and Wales did not mention ADHD (Lader et al., 2003), it has now been shown that, compared to 2% community prevalence (ONS Mental Health of Children and Young People in England, 2017), ADHD is prevalent in 17% of English YP in secure care (Hales et al., 2022) and is the most common mental health (MH) need in the welfare and Youth Justice system (YJS), at 25% and 17%, respectively (Hales et al., 2018). An international systematic review found 17.3% of adolescents in juvenile detention had ADHD, with a higher prevalence in investigations published after 2006 (Beaudry et al., 2020). In a study of incarcerated adults, 25% met the diagnostic criteria for ADHD (Young et al., 2018).

ADHD is a neurodevelopmental disorder (NDD) along with other disorders such as Autistic Spectrum Condition (ASC) and Learning Disability (LD). It is associated with deprivation across the life span, prenatally with alcohol exposure and foetal alcohol spectrum disorders (Young et al., 2016), then significantly increased mortality driven by death from unnatural causes (Dalsgaard et al., 2015). It is associated with younger age of offending, recidivism, and persistence of offending into adulthood (Mohr-Jensen & Steinhausen, 2016), alongside development of dysfunctional personality traits such as antisocial behaviour, oppositional defiant disorder (ODD), and conduct disorder (CD) (Sibley et al., 2011). Symptoms persist into adult life in about two-thirds (ONS Mental Health of Children and Young People in England, 2017; Sibley et al., 2017), linked with gaining no qualifications, economic inactivity, and substance use disorders (Jotangia & Brugha, 2009).

Pathways for YP with ADHD require distinction from other NDD (Transforming Care, 2012). ADHD has a unique treatment pathway (NICE guideline, 2018; Young et al., 2020) with pharmacotherapy available for YP through CAMHS (Cortese et al., 2018; Mechler et al., 2022) alongside other multimodal treatments (Drechsler et al., 2020), such as non-violent resistance (NVR, Smith et al., 2022). Pharmacotherapy is associated with a reduction in violent reoffending and future conviction (Young et al., 2018). Supporting YP in education with reasonable adjustments and an EHCP (Education, Health, and Care Plan), has been shown to reduce morbidity (Russell et al., 2023), while multi-agency work with social care can support the prevention of risk factors such as school exclusion (Hughes et al., 2012). Once conduct and substance misuse disorders develop, it can be difficult to identify NDD (Beaudry et al., 2020). Previous studies have shown that it is common for high-risk YP to have not had input from mainstream CAMHS (Griffin et al., 2012).

The North West London Forensic Child and Adolescent Mental Health Service (NWLFCAMHS) was set up in 2018 as part of a network of FCAMHS services covering England, to improve care for YP in crisis (Future in Mind, 2015) by implementing pathways for community care to avoid inpatient admissions, placement breakdown, or secure detention. Referrals to

NWLFCAMHS are welcomed from any agency working with YP across eight boroughs in North West London, covering a population of 2.3 million. The model is mainly one of the consultation; the team does not take over a case, instead working alongside services (Lane et al., 2023). The NWLFCAMHS team offers various levels of input from Level 1 (one-off case discussion), Level 2–3 (consultation and/or attendance at multiagency meetings), Level 4 (indirect formulation and/or risk assessment with the local teams), Level 5 (direct assessment), and Level 6 (direct intervention).

This study aims to:

- Compare the profiles of those with ADHD to those without NDD or those with only ASC referred to a city community FCAMHS service;
- Investigate services offered to YP with ADHD referred to FCAMHS;
- In order to consider any missed opportunities prior to offending behaviour and referral.

Methods

This is a service evaluation of all new referrals to NWLFCAMHS.

Ethics

As this project was a part of a service evaluation, approved by the West London Forensic Service Audit Committee to map the needs of YP referred, ethical approval was not needed.

Population

All referrals to NWLFCAMHS are over a period of 53 months from the start of service (mid-August 2018) to the end of December 2022.

Sample

Inclusion criteria for the 'ADHD' group were as follows: YP discharged with diagnosis of ADHD and those still open to NWLFCAMHS who had a diagnosis of ADHD at referral. Comparisons were made to a 'No NDD' group (those without any confirmed or suspected NDD diagnosis, therefore not including those referred for and awaiting assessment) and an ASC group (those with a diagnosis of ASC without ADHD or suspected ADHD).

Procedure

Data on demographics (age, gender, ethnicity, and social circumstances), service involvement (receiving involvement from Tier 3 CAMHS, social care, Youth Justice/Youth Offending Teams, and education at time of referral), referring agency, risk, and FCAMHS input were collected by the named NWLFCAMHS clinician for the referral completing the data form following initial consultation and on discharge using both clinical knowledge of the YP and case notes. The data were pseudo-anonymised for analyses. Educational needs were described by place of education and whether the young person was on an EHCP. Risk was rated clinically following team discussion for risk to self, others, and from others, at a level of low, moderate, and severe. Risk of exploitation was also registered by social care and Youth Offending Teams (YOT) through referral to the NRM (National Referral Mechanism).

Statistical analysis

Frequencies and percentages were used to present descriptive data, except for age which was described by means and standard deviations. Comparisons between YP with ADHD and those with No NDD and between YP with ADHD and those with ASC (without ADHD) involving categorical variables were made using chi-square and Fisher's exact statistics, with odds ratios (ORs) and 95% confidence intervals (CIs) calculated to describe the magnitude of (significant) pairwise differences. Corresponding comparisons of age were made with independent group t-tests; bias and accelerated bootstrapping (2000 replications) was employed where the distribution of age within groups did not approximate a Gaussian distribution. The Benjamini–Hochberg procedure [False Discovery Rate (FDR); Benjamini and Hochberg (1995)] using a prescribed alpha level of 0.05 was applied to control for multiple testing between ADHD and No NDD and ASC groups. Comparisons between proportions at entry to FCAMHS and subsequent discharge (e.g. risk levels) were measured using McNemar mid-p test for binary matched-pair data (Fagerland et al., 2013). Within-group ADHD comparisons that considered the impact of demographic variables and comorbid NDD on access to educational and health service needs and YOT involvement used Chi-square, Fisher's exact and independent groups t-tests according to variable distribution. Where we found comorbid NDD to have a significant impact on access to services, logistic regression (via Generalized Linear Modelling with logit link) was employed to ascertain independent effects of ADHD and ASC/LD on outcomes in the FCAMHS cohort. Other than the analyses that employed FDR, the

criterion for statistical significance was set at $p < 0.05$. All analyses were completed with SPSS (IBM, Version 28.0).

Results

Profile

Total number of referrals

A total of 494 referrals were received from the start of service (August 2018) through to the end of December 2022, of which 50 (10.1%) were re-referrals. For the purposes of this study, re-referrals were considered as an extension of previous input; therefore, 444 were individual YP referred for the first time. At census point, 413 (93.0%) YP were discharged; 31 (7.0%) remained open. One individual did not have NDD data so was excluded. A total sample of 443 YP was used (342 (cis) male, 95 (cis) male, 3 non-binary, 2 trans male, and 1 trans female).

Prevalence of ADHD and comorbid NDD

One in six YP opened up to FCAMHS (74 of 443, 16.7%) had a diagnosis of ADHD. The rate was comparable in (cis) males (16.7%, 95% CI = 12.7%, 20.6%) and (cis) females (16.8%, 95% CI = 9.3%, 24.4%; $p = 0.968$) but markedly higher than that estimated in UK individuals aged 3–17 years registered with the IQVIA Medical Research Data (IMRD) UK primary care database

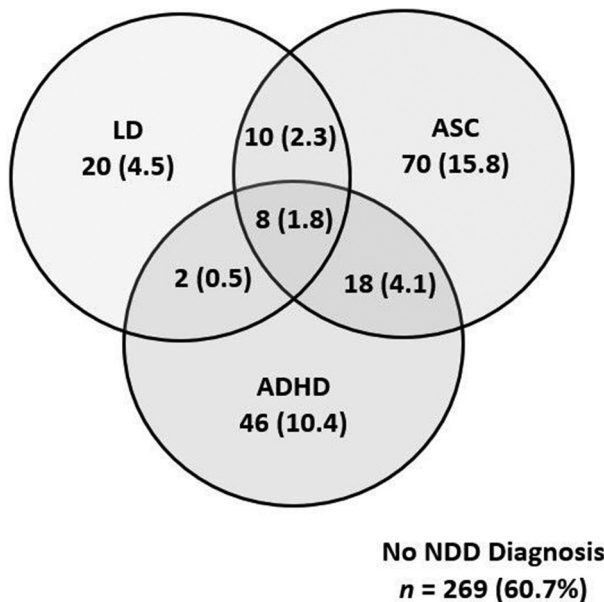


Figure 1. Overlap of ADHD, ASC, and LD and in YP receiving FCAMHS input ($n = 443$). Values represent frequencies (percentages).

(McKechnie et al., 2023; males 1.75%, 95% CI = 1.74%, 1.77%; females 0.38%, 95% CI = 0.37%, 0.38%).

Of the 74 with ADHD, a third had another NDD; a tenth (8, 10.8%) had both ASC and LD, a quarter (18, 24.3%) ASC and 2 (2.7%) LD (Figure 1). The odds of having ASC were significantly higher in YP with ADHD than those without (35.1% versus 23.9%, OR = 1.75, 95% CI = 1.02, 3.01). While the proportion of those with ADHD who also had LD was (numerically) greater than those without ADHD (13.5% versus 8.8%), the difference was not significant (OR = 1.62, 95% CI = 0.75, 3.50).

ADHD assessments while receiving FCAMHS input

While receiving FCAMHS input, 21 YP completed an ADHD assessment with CAMHS; 7 were given a diagnosis (1 of 5 who were already on the waiting list on FCAMHS referral and 6 of 16 recommended for CAMHS assessment during FCAMHS involvement; Figure 2). There was no observed association between the outcome of the assessment with respect to the presence of conduct disorder and reported trauma.

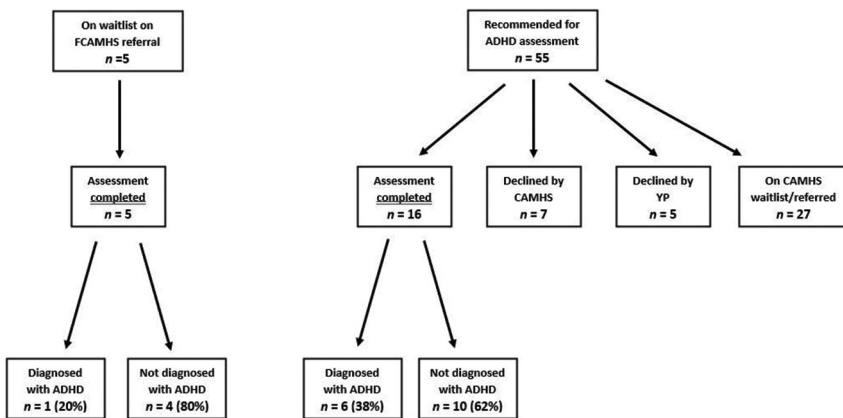


Figure 2. Pathways of young people receiving FCAMHS input awaiting or recommended for an assessment for ADHD.

Another 38 were recommended for an ADHD assessment that had not been completed at census time; 7 of these were declined by CAMHS, 5 YP declined assessment and 27 remained on the waiting list at discharge. These 38 YP were excluded from all comparative analyses.

Demographic profile of YP with ADHD

YP with ADHD referred into FCAMHS (mean age = 14.28 years, SD = 2.19) were significantly younger than YP with No NDD (mean age = 15.07 years,

Table 1. ADHD diagnostic according to gender and ethnic background status (ADHD $n = 74$; No NDD $n = 178$; ASC (without ADHD) $n = 78$). Values represent frequencies (percentages).

Gender	Female ($n = 95$)	Male ($n = 342$)			
ADHD	16 (16.8)	57 (16.7)			
No NDD	35 (36.8)	140 (40.9)			
ASC (without ADHD)	13 (13.7)	65 (19.0)			
Ethnic background	White ($n = 177$)	Black/Black British ($n = 96$)	Asian/Asian British ($n = 61$)	Arab/Middle Eastern ($n = 37$)	Dual Heritage ($n = 66$)
ADHD	39 (22.0)	10 (10.4)	5 (8.2)	3 (8.1)	15 (22.7)
No NDD***	51 (28.8)	44 (45.8)	31 (50.8)	26 (70.3)	25 (37.9)
ASC (without ADHD)	44 (24.9)	13 (13.5)	13 (21.3)	2 (5.4)	6 (9.1)

The No NDD group excludes those awaiting assessment for any NDD; ADHD group includes young people with comorbid ASC and/or LD; ASC group includes only those young people with ASC who do not have comorbid ADHD. The ADHD group included one nonbinary young person, the No NDD group included one nonbinary young person, one trans male, and one trans female. Ethnic background data was not available for three young people (two in ADHD, one in No NDD) – percentages were calculated from available data only; White ethnic background included three Gypsy or Irish Traveller; Black/Black British ethnic background included three dual heritage Black British African and Afro-Caribbean. Asterisks indicate significant difference across ethnic background groups between YP with ADHD and YP with no NDD (***) $p < 0.001$.

SD 1.91, $p = 0.009$), and there was a trend for YP with ADHD to be younger than YP with ASC (mean age = 14.94 years, SD = 2.21, $p = 0.070$). There were no significant differences in male-female ratios in ADHD compared to No NDD and ASC groups (Table 1). Half (39 of 74, 53%) of the ADHD group were white compared with only 12.7% of YP from all other ethnic backgrounds (33 of 260), reflecting an almost 3-times increased frequency of ADHD (relative to No NDD) in white YP (OR = 2.92, 95% CI = 1.66, 5.14).

Family situation

Only a quarter of YP with ADHD (18, 25%) lived with two parents; this was comparable to those with No NDD (44, 25.3%) and less than that in YP with ASC (32, 41.0%; Table 2), but the family structure was not significantly different across groups. Almost three-quarters of YP with ADHD (54, 74.0%) were in their family home on referral. More than 40% (32, 43.2%) of the ADHD group had observed or experienced domestic violence, almost threefold greater than for YP with ASC (OR = 2.73, 95% CI = 1.35, 5.56).

Services involved

CAMHS

Almost three-quarters of YP (55, 74.3%) with ADHD were open to CAMHS on referral to FCAMHS (Table 2), comparable to the proportion in YP with ASC (and no ADHD; 88, 75.3%), but markedly higher than YP with No NDD (88,



Table 2. Social service involvement and educational and NEET status according to ADHD diagnostic status.

	ADHD (n = 74)	No NDD (n = 178)	ASC (w/out ADHD) (n = 78)	ADHD vs No NDD	ADHD vs ASC
	n (%)	n (%)	n (%)	P	p
Education					
EHCP in Place (referral)	41 (55.4)	16 (9.0)	48 (61.5)	<0.001	0.443
Type of education (during FCAMHS)					
Mainstream	20 (27.8)	78 (45.6)	27 (34.6)		
Special	39 (54.2)	46 (26.9)	39 (50.0)		
NEET	13 (18.1)	47 (27.5)	12 (15.4)	<0.001	0.656
Service involvement					
Open to CAMHS (referral)	55 (74.3)	88 (49.7)	58 (75.3)	<0.001	0.887
Social services involvement (referral)	62 (83.8)	141 (79.7)	59 (75.6)	0.449	0.213
Gang worker involvement (referral)	6 (9.1)	17 (10.8)	2 (2.7)	0.697	0.147
Youth Offending Team (YOT) input					
At entry to FCAMHS	22 (29.7)	53 (29.8)	5 (6.4)	0.994	<0.001
On discharge from FCAMHS	21 (38.2)	61 (38.9)	9 (13.8)	0.930	0.002
National Referral Mechanism (NRM)					
At entry to FCAMHS	5 (7.1)	9 (5.3)	1 (1.4)	0.558	0.209
On discharge from FCAMHS	14 (23.0)	26 (15.6)	2 (2.9)	0.195	<0.001
≥3 services involved					
At entry to FCAMHS	35 (49.3)	55 (31.4)	24 (32.0)	0.008	0.033
On discharge from FCAMHS	38 (55.9)	65 (39.4)	32 (47.1)	0.021	0.303
Primary reason for referral					
Violence	32 (43.2)	63 (35.4)	33 (42.3)		
Offence related behaviour	10 (13.5)	25 (14.0)	15 (19.2)		
Verbal threats	5 (6.8)	11 (6.2)	9 (11.5)		
Exploitation	13 (17.6)	25 (14.0)	6 (7.7)		
Transition/needs in secure	5 (6.8)	11 (6.2)	3 (3.8)		
Request for second opinion	6 (8.1)	28 (15.7)	8 (10.3)		
Other	3 (4.1)	15 (8.4)	4 (5.1)	0.544	0.474

(Continued)

Table 2. (Continued).

	ADHD (n = 74)	No NDD (n = 178)	ASC (w/out ADHD) (n = 78)	ADHD vs No NDD	ADHD vs ASC
	n (%)	n (%)	n (%)	P	P
Main referring service					
Mental health	43 (58.1)	71 (39.9)	49 (62.8)		
Local authority	25 (33.8)	76 (42.7)	21 (26.9)		
Education	3 (4.1)	12 (6.7)	7 (9.0)		
YJS	2 (2.7)	15 (8.4)	0 (0.0)	0.046	0.237
Family situation (on referral)					
Family structure					
Two parents	18 (25.0)	44 (25.3)	32 (41.0)		
One parent (with/out step-parent)	34 (47.2)	84 (48.3)	34 (43.6)		
Parent separated and both involved	12 (16.7)	18 (10.3)	4 (5.1)		
Other family/No contact with family	8 (11.1)	28 (16.1)	8 (10.3)	0.467	0.053
Placed with family home on referral	54 (74.0)	109 (62.3)	61 (78.2)	0.077	0.542
Domestic violence in family	32 (43.2)	66 (37.1)	17 (21.8)	0.361	0.005
FCAMHS input					
Maximum input level received					
One-off Informal brief advice	12 (17.6)	62 (37.6)	17 (24.6)		
Ongoing consultation/Multiagency meetings	32 (47.1)	64 (38.8)	31 (44.9)		
Notes assessment/Multiagency formulation	16 (23.5)	22 (13.3)	14 (20.3)		
Direct assessment/Joint intervention	8 (11.8)	17 (10.3)	7 (10.1)	0.019	0.784
Length open to FCAMHS					
One-off/up to 1 month	14 (20.6)	68 (40.5)	14 (20.3)		
16 months	30 (44.1)	65 (38.7)	37 (53.6)		
>6 months	24 (35.3)	35 (20.8)	18 (26.1)	0.007	0.454

The No NDD group excludes those awaiting assessment for any NDD; ADHD group includes young people with comorbid ASC and/or LD; ASC group includes only those young people with ASC who do not have comorbid ADHD. EHCP = Education and Health Care Plan; NEET = Not in Education, Employment, or Training. Sample sizes differed across variables due to missing or unavailable data; n values under ADHD, No NDD, and ASC group headings are the maximum for any given variable; percentages were calculated from available data only. For Primary Referring Service, six YP (one ADHD, four No NDD, and one ASC) were referred by other means (health services, family, voluntary services) and were not included in associative analyses; p values were calculated from chi-square (significant associations after correction for multiple tests of association are emboldened).

49.7%; OR = 3.14 95% CI = 1.68, 5.88). There was no significant association of gender ($p = 0.163$) or ethnic background ($p = 0.918$) with being open to CAMHS in the ADHD cohort. All but three YP with ADHD and comorbid ASC and/or LD (25 of 28, 89.3%) were open to CAMHS compared to two-thirds of those with ADHD only (30 of 46, 65.2%; $p = 0.028$), suggesting YP with ADHD were more likely to be open to CAMHS when they had a comorbid NDD; nevertheless, multivariate analyses considering YP with ADHD, ASC and/or LD, and No NDD indicated that a diagnosis of ASC and/or LD (OR = 2.90, 95% CI = 1.76, 4.76, $p < 0.001$) and a diagnosis of ADHD (OR = 2.14, 95% CI = 1.19, 3.85, $p = 0.011$) both independently increased the odds of being open to CAMHS at time of referral (relative to those without a NDD).

YOT

Approximately 30% of YP with ADHD had YOT input on FCAMHS entry; this increased to a little under 40% on discharge but was comparable with YOT input for those with No NDD at both periods (Table 2). However, YOT input was much more frequent in YP with ADHD (22, 29.7% at entry) than in those with ASC (5, 6.4% at entry), both at entry to FCAMHS (OR = 6.17, 95% CI = 2.20, 17.24) and at discharge (OR = 3.84, 95% CI = 1.58, 9.35). Interestingly, within the ADHD group, more than 40% (19 of 46, 41.3%) of YP with only ADHD had YOT input, compared to a tenth (3 of 28, 10.7%) of YP with comorbid ASC and/or LD ($p = 0.008$).

NRM

NRM input was comparable between groups on entry, but significantly elevated in YP with ADHD at discharge relative to those with ASC (OR = 9.80, 95% CI = 2.13, 45.45), reflecting an increase in YP with ADHD receiving NRM input during FCAMHS involvement (from 5, 7.1% to 14, 23.0%; $p = 0.002$).

Education

Only a quarter (20, 27.8%) of the ADHD group were in mainstream school, with over half in special education (39, 54.2%) and a fifth not in education, training, or employment (NEET, 13, 18.1%; Table 2, $n = 13$). The odds of YP with ADHD being placed in special education rather than mainstream were three times greater than those with no NDD (OR = 3.31, 95% CI = 1.73, 6.34). Of those in special education, YP with ADHD were more often in (alternative provision) specialist schools (19, 48.7%) than Pupil Referral Units (PRU; 12, 30.8%) which contrasted with those with no NDD (specialist schools 4, 8.7%, PRU 30, 65.2%; $p < 0.001$). Just over half (41, 55.4%) of YP with ADHD had an EHCP in place at referral compared to a tenth of the No NDD group (16, 9.0%) reflecting a more than 10-fold increase in odds (OR = 11.61 95% CI = 5.90,

22.82). However, 17 YP out of mainstream school did not have an EHCP (Supplementary Table S1).

Within the ADHD group, those with an EHCP were more often placed in special education (29 of 40, 72.5%) than those without an EHCP (10 of 32, 31.3%; $p < 0.001$; Supplementary Table S1). EHCP status in YP with ADHD was unrelated to ethnic background ($p = 0.861$), and while less female YP with ADHD had an EHCP in place (6 of 16, 37.5%) than males (34 of 57, 59.6%), the difference was not significant ($p = 0.116$). The odds of having an EHCP increased threefold if YP with ADHD had a comorbid ASC and/or LD (21 of 28, 75.0%) compared to ADHD only [20 of 46, 43.5%; $p = 0.008$, OR = 3.00 (95% CI = 1.39, 11.11)], suggesting high rates of EHCP in YP with ADHD was in part due to comorbid ASC (Supplementary Table S2). In a similar manner, the proportion of YP with ADHD in special education was higher in those with comorbid ASC and/or LD (20 of 28, 71.4%) than ADHD only (19 of 46, 43.2%; $p = 0.019$), and more than half of the ADHD only group in special education were in a Pupil Referral Unit (10 of 19, 52.6%) compared to only two (of 20, 10.0%; $p = 0.006$) YP with comorbid ASC and/or LD (Supplementary Table S2). However, multivariate analyses considering YP with ADHD, ASC, and/or LD, and No NDD indicated that while, compared to individuals with No NDD, a diagnosis of ASC and/or LD was strongly linked with having an EHCP in place (OR = 12.32, 95% CI = 7.05, 21.54, $p < 0.001$), a diagnosis of ADHD also independently increased the odds of having an EHCP (by more than four times; OR = 4.54, 95% CI = 2.39, 8.64, $p < 0.001$).

Number of services involved

At referral, the odds of having more than three services involved were more than double in YP with ADHD than YP with No NDD (OR = 2.12, 95% CI = 1.21, 3.73) and ASC (OR = 2.07, 95% CI = 1.05, 4.05), although the latter difference was not significant after correction (Table 2). By discharge, there were no significant differences between groups (after correction), largely due to an increase in the number of YP with No NDD and ASC accessing a greater number of services.

FCAMHS input

Reason for referral

A small majority of YP with ADHD were referred for violent or offence-related behaviour, but at comparable rates to those with No NDD and those with ASC, with no significant differences between groups for primary referral reason (Table 2). Most YP with ADHD were referred via mental health services (58.1%) or the local authority (33.8%; Table 2). The distribution of referring services in YP with ADHD was similar to that in YP with ASC. There was a suggestion of difference relative to YP with No NDD, reflecting a trend for

increased frequency of MH service referrals in ADHD (OR = 2.09, 95% CI = 1.21, 3.63), although this was not significant after correction.

FCAMHS input level

Most YP with ADHD received input from FCAMHS that ranged from formal consultation with supervision up to multiagency formulation (with review/assessment of YP notes; Table 2). For a smaller number (8, 11.8%), FCAMHS input included a direct assessment and/or involvement in a joint intervention. A similar pattern of involvement was observed in YP with ASC. Compared to YP with No NDD, those with ADHD had increased maximum FCAMHS input levels and a greater length of FCAMHS input, reflecting a much smaller proportion of individuals involved in one-off (12, 17.6%) in the ADHD group.

Level of risk

A little less than half of YP with ADHD (31, 44.3%) were assessed at referral with moderate or severe risk to self, consistent with levels observed in both ASC and No NDD groups (for both comparisons, $p > 0.434$; Figure 3). The

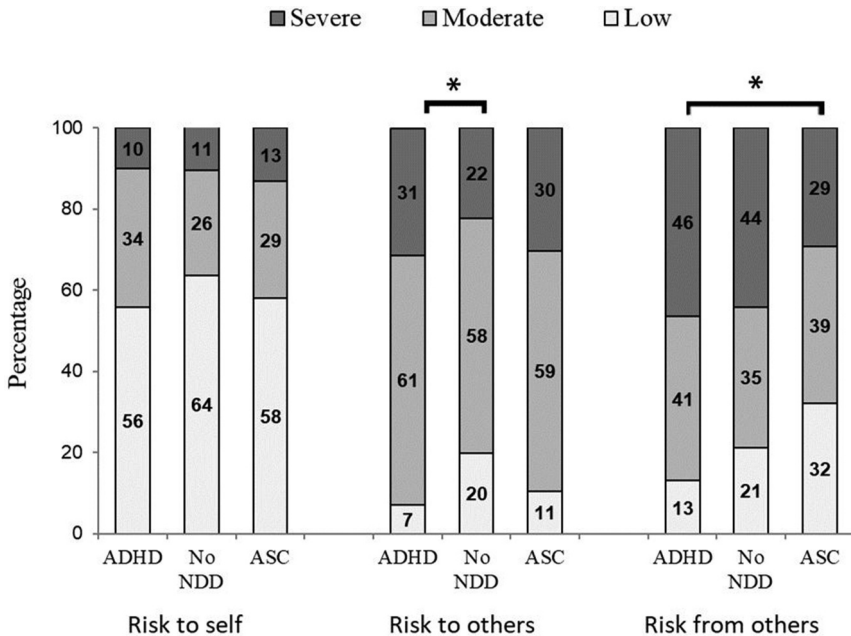


Figure 3. Observed risk level at referral to FCAMHS according to ADHD diagnostic status. The No NDD group excludes those awaiting assessment for any NDD; ADHD group includes young people with comorbid ASC and/or LD; ASC group includes only those young people with ASC who do not have comorbid ADHD. Data labels represent percentage values. Pairwise differences between groups are indicated by an asterisk ($*p < 0.05$).

overwhelming majority of YP with ADHD evidenced moderate or severe levels of risk to others (65, 92.8%) and moderate or severe levels of risk from others (60, 87.0%). Levels of risk to others in YP with ADHD were significantly higher than in those with No NDD ($p = 0.037$) but comparable to levels observed in YP with ASC ($p = 0.773$). In contrast, levels of risk from others in YP with ADHD were comparable to those with No NDD ($p = 0.333$) but significantly higher than in YP with ASC ($p = 0.015$). Nearly half of YP with ADHD were at severe risk from others (32, 46.4%), double the odds of severe risk in the ASC group (OR = 2.08, 95% CI = 1.05, 4.13). At discharge, the proportion of YP with ADHD that posed severe risk to others (12, 18.5%) and were at severe risk from others (21, 32.3%) reduced significantly, in parallel with decreases in the No NDD and ASC groups (for all mid-p McNemar's tests, $p < 0.040$; Supplementary Figure S1).

Discussion

This is the first study focusing exclusively on YP with ADHD referred to FCAMHS, identifying needs and missed opportunities for intervention and support in this population. YP with ADHD are overrepresented in referrals to NWLFCAMHS, with greater prevalence than the community (McKechnie et al., 2023), corresponding to other FCAMHS studies (Lane et al., 2023; Kalebic et al., 2022).

Of those referred for ADHD assessment whilst open to FCAMHS, over two-thirds assessed did not gain a diagnosis. It is not clear whether this is because the FCAMHS team are over-zealous in referral, or that ADHD is more difficult to diagnose in this cohort, perhaps suggesting conduct disorder and/or substance misuse mask ADHD in YP in the YJS pathway (Young et al., 2015). More research is needed into substance use in this group, or a qualitative study to understand the validity of diagnostic decision making. In terms of service implications, perhaps more joint assessments could take place with forensic clinicians assisting with generic assessments.

Whilst there is a significant racial discrepancy with fewer from racialised backgrounds having an ADHD diagnosis, the prevalence of those from racialised background in the FCAMHS cohort is far higher than seen in the general population (ONS Mental Health of Children and Young People in England, 2017). This is also seen in YP placed in secure services (Hales et al., 2018). This finding supports other studies noting that YP from racialised backgrounds are more likely to be criminalised and referred to YJS than to access generic MH services (Sandiford et al., submitted). Black YP are more likely to be charged with drug offences than white (Lammy, 2018), potentiality dissuading CAMHS from assessment or medication in known or suspected substance use.

For those with ADHD there was a higher concern about criminal behaviour, such that YP referred to NWLFCAMHS with ADHD had more input

from YOT than those with only ASC. However, this concern did not translate to higher input from CAMHS. Those with ADHD without comorbid ASC were much more likely to have YOT input at referral, reinforcing concerns that YP with ADHD are more likely to be judged for their behaviour than understood to be in need of support. Interestingly, NRM input increased in the ADHD group during NWLFCAMHS input; suggesting that FCAMHS formulation might contribute a protective role in the recognition of vulnerability to exploitation, identifying systemic drivers behind behaviour.

YP with ADHD were more likely to be in special education or NEET than those without NDD. Whilst also more likely to have an EHCP, almost half did not, including some who were out of school. Those with ADHD and comorbid ASC were more likely to have an EHCP, highlighting a missed understanding of the need for YP with ADHD alone. Schools could benefit from joint health and educational psychology initiatives, whilst CAMHS assessments for attendance or behavioural problems may identify needs that can be met through educational support specified through EHCP.

Whilst three quarters were open to CAMHS on referral, more could be as ADHD pharmacotherapy is known to be extremely effective. There were also a large number on the wait list for assessment. Those open to CAMHS may be seen as complex, with more having comorbid NDD and/or being out of education, though this was not seen for those involved with YOT services. Further study could establish whether input captured by those open to CAMHS ever to clarify whether those not open could be due to YP disengagement or services closing a case. Socio-economic factors and adversities are linked to the likelihood of ADHD diagnosis (ONS Mental Health of Children and Young People in England, 2017), so clinicians may need to work harder to engage these YP.

Diagnosis of ADHD is an important risk factor for this population; risk to others was rated more severe in YP with ADHD compared to those without NDD. This could be related to impulsivity; the Structured Assessment of Violence in Youth (SAVRY) has ADHD as a risk factor (Borum et al., 2010). Risk from others was curiously higher than the ASC group which were assumed to be more vulnerable. This may have been influenced somehow by the COVID-19 lockdowns during which those with EHCPs were protected by the continued structure of the school, and those without were given less structure (Skipp et al., 2021). The ADHD group, with their impulsivity, excitement seeking, and risk taking, were possibly more likely than their ASC peers with EHCPs, to be drawn into antisocial behaviours in the community where they would be likely to be exploited due to their vulnerabilities.

There was significant comorbidity with other NDD, similar to YP in secure care (Hales et al., 2022). Comorbidity impacted on service involvement, with more of those with comorbidity having an EHCP, being placed in specialist

education and open to CAMHS. Whilst response to comorbidity requires a holistic multiagency approach to care and intervention, those with only ADHD may also benefit from this level of input. The NWLFCAMHS team met some of this need, offering more input for YP with ADHD than those with no NDD.

Limitations

This was a clinical group, with FCAMHS input mainly via consultation rather than assessment. This had an impact on how diagnoses were understood and how we defined the ADHD group.

Choosing the ADHD group was challenging as there was much comorbidity. While isolating ADHD only may have identified the specific impact of ADHD, numbers were small and this was a naturalistic service evaluation, such that understanding the needs of those with ADHD, including comorbidity, was important.

Wait lists are long for ADHD assessment. As two thirds of those assessed were not given a diagnosis, being on the wait list does not equate to diagnosis, and, therefore, we opted to include those with a diagnosis of ADHD on discharge, allowing for diagnosis during input, and for those open, if they already had a diagnosis. It is likely, therefore, that we did not include some who had ADHD but not yet diagnosed, underestimating the prevalence.

We have evaluated risk behaviours and service response but not specifically assessed needs, rather assuming needs based on the services involved.

Recommendations for future research

Further evaluation could usefully directly assess needs, for example using the Salford Needs Assessment Schedule for Adolescents (S.NASA; Kroll et al., 1999). A cohort of YP with ADHD who do not need FCAMHS could be a comparison, to highlight the specific needs of this group.

More research is needed into the understanding of the impact on ADHD of substance use, trauma, social class, and comorbidity. Further study could investigate intersectionality and what divides those with ADHD at severe risk.

Conclusion

This paper provides clinically relevant information demonstrating how the lack of CAMHS, EHCP, and mainstream school contributes to some YP with ADHD joining the pathway into youth justice services. As one secure hospital clinician notes in a qualitative study, as the group is in trouble but not yet in

prison, 'we need to put more resources into the community, before they get locked up' (Bartlett et al., 2018).

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