ADHD beyond symptoms:

Understanding prevalence, comorbidity and differential clarity in clinical practice

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Disclaimer: This material is intended for informational and educational purposes only. It highlights patterns and considerations commonly observed in clinical practice but does not capture the full complexity of ADHD or co-occurring conditions. Please refer to DSM-5-TR, ICD-10/11, and national guidelines for diagnosis and management. The authors and publishers assume no responsibility for clinical decisions made based on this content.

Global ADHD statistics

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Prevalence and impact

Approximately

1 million

more US children had been diagnosed with ADHD in 2022 compared with 2016

The global ADHD therapeutics market is projected to grow from roughly $25 billion in 2024 to

over

$45 billion

by 2034

NHS estimates for February 2026 suggest over

735,000 people

may be waiting for an ADHD assessment

ADHD and comorbidities

Over half

of adults with ADHD

have at least one comorbid psychiatric condition, and nearly 40% have two or more

42%

of children with Autism (ASD) also meet ADHD diagnostic criteria

ADHD and anxiety disorders are among the most common psychiatric disorders with a

25%–50%

comorbidity rate

Sleep problems are reported in an estimated

25%–50%

of individuals who have ADHD

At least

40%

of adults with Substance use Disorder (SUD) have ADHD

Source reference: Tandfonline (2024); Fact.MR ADHD Therapeutics Market; NHS Digital MI ADHD (Feb 2026); PMC7009330 (NIH); Springer Brain Imaging & Behavior (2015); SAGE J Atten Disord (2014); PMC6299464 (NIH).

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ADHD vs anxiety

How symptoms show up day to day

Overlapping symptoms:	Distinguishing symptoms:
Excessive apprehension/worry (inattentive/hesitancy/caution)	Symptoms must persist for six months through two or more settings
Feeling restless or keyed up	Irritability, muscle tension, and sleep disturbance
Difficulty concentrating or mind-blanking	Symptom severity can vary by task or event
Losing track of items of necessity	Symptoms more likely related to social events than day to day tasks
	Can typically be tied back to a specific event or time in which symptoms began (symptoms not present before this event)

ADHD vs autism

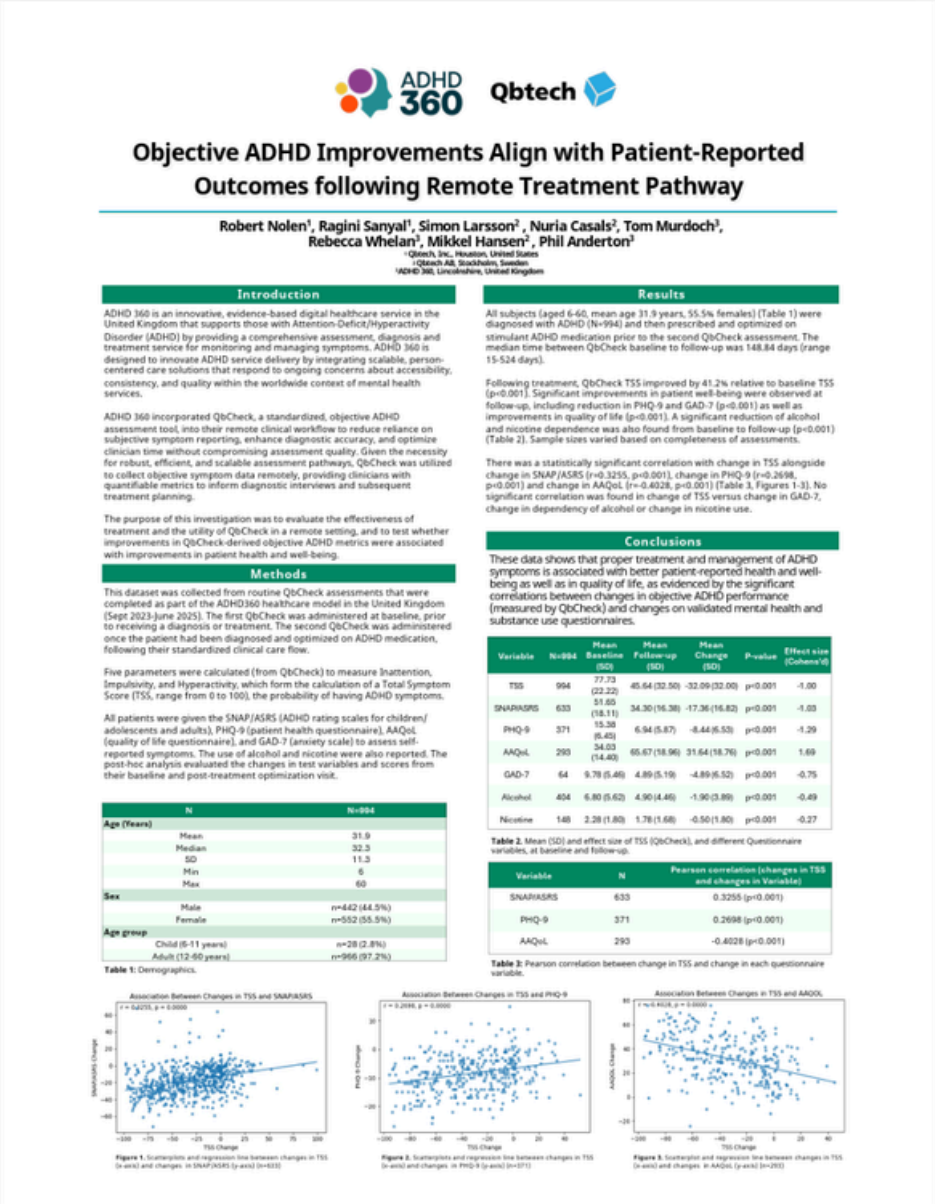
How symptoms show up day to day

Overlapping symptoms:	Distinguishing symptoms:
Restricted or repetitive behaviors	Symptoms must be present ages 3-7
Difficulty focusing on tasks of low interest	Social communication and social interaction deficits across multiple domains
Difficulty being redirected or adapting to change	Unusual interest in sensory aspects
Repetitive motor movements	Deficits in verbal and/or non-verbal communication
	Deficits in maintaining or understanding relationships

Efficacy of objective assessment tools

Real-world data to inform patient care

The present study aims to evaluate the effectiveness of ADHD treatment and the utility of objective tools in a remote setting. It also explored improvements in objective ADHD metrics and their association with improvements in patient health and well-being.



ADHD 360 Qbtech

Objective ADHD Improvements Align with Patient-Reported Outcomes following Remote Treatment Pathway

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Introduction

ADHD 360 is an innovative, evidence-based digital healthcare service in the United Kingdom that supports those with Attention-Deficit/Hyperactivity Disorder (ADHD) by providing a comprehensive assessment, diagnosis and treatment service for monitoring and managing symptoms. ADHD 360 is designed to innovate ADHD service delivery by integrating scalable, person-centered care solutions that respond to ongoing concerns about accessibility, consistency, and quality within the worldwide context of mental health services.

ADHD 360 incorporated QbCheck, a standardized, objective ADHD assessment tool, into their remote clinical workflow to reduce reliance on subjective symptom reporting, enhance diagnostic accuracy, and optimize clinician time without compromising assessment quality. Given the necessity for robust, efficient, and scalable assessment pathways, QbCheck was utilized to collect objective symptom data remotely, providing clinicians with quantifiable metrics to inform diagnostic interviews and subsequent treatment planning.

The purpose of this investigation was to evaluate the effectiveness of treatment and the utility of QbCheck in a remote setting, and to test whether improvements in QbCheck-derived objective ADHD metrics were associated with improvements in patient health and well-being.

Methods

This dataset was collected from routine QbCheck assessments that were completed as part of the ADHD360 healthcare model in the United Kingdom (Sept 2023-June 2025). The first QbCheck was administered at baseline, prior to receiving a diagnosis or treatment. The second QbCheck was administered once the patient had been diagnosed and optimized on ADHD medication, following their standardized clinical care flow.

Five parameters were calculated (from QbCheck) to measure Inattention, Impulsivity, and Hyperactivity, which form the calculation of a Total Symptom Score (TSS, range from 0 to 100), the probability of having ADHD symptoms.

All patients were given the SNAP/ASRS (ADHD rating scales for children/adolescents and adults), PHQ-9 (patient health questionnaire), AAQoL (quality of life questionnaire), and GAD-7 (anxiety scale) to assess self-reported symptoms. The use of alcohol and nicotine were also reported. The post-hoc analysis evaluated the changes in test variables and scores from their baseline and post-treatment optimization visit.

N	N=994
Age (Years)	
Mean	31.9
Median	32.3
SD	11.3
Min	6
Max	60
Sex	
Male	n=442 (44.5%)
Female	n=552 (55.5%)
Age group	
Child (6-11 years)	n=28 (2.8%)
Adult (12-60 years)	n=966 (97.2%)

Table 1: Demographics.

Results

All subjects (aged 6-60, mean age 31.9 years, 55.5% females) (Table 1) were diagnosed with ADHD (N=994) and then prescribed and optimized on stimulant ADHD medication prior to the second QbCheck assessment. The median time between QbCheck baseline to follow-up was 148.84 days (range 15-524 days).

Following treatment, QbCheck TSS improved by 41.2% relative to baseline TSS ($p<0.001$). Significant improvements in patient well-being were observed at follow-up, including reduction in PHQ-9 and GAD-7 ($p<0.001$) as well as improvements in quality of life ($p<0.001$). A significant reduction of alcohol and nicotine dependence was also found from baseline to follow-up ($p<0.001$) (Table 2). Sample sizes varied based on completeness of assessments.

There was a statistically significant correlation with change in TSS alongside change in SNAP/ASRS ($r=0.3255$, $p<0.001$), change in PHQ-9 ($r=0.2698$, $p<0.001$) and change in AAQoL ($r=-0.4028$, $p<0.001$) (Table 3, Figures 1-3). No significant correlation was found in change of TSS versus change in GAD-7, change in dependency of alcohol or change in nicotine use.

Conclusions

These data shows that proper treatment and management of ADHD symptoms is associated with better patient-reported health and well-being as well as in quality of life, as evidenced by the significant correlations between changes in objective ADHD performance (measured by QbCheck) and changes on validated mental health and substance use questionnaires.

Variable	N=994	Mean Baseline (SD)	Mean Follow-up (SD)	Mean Change (SD)	P-value	Effect size (Cohens'd)
TSS	994	77.73 (22.22)	45.64 (32.50)	-32.09 (32.00)	p<0.001	-1.00
SNAP/ASRS	633	51.65 (18.11)	34.30 (16.38)	-17.36 (16.82)	p<0.001	-1.03
PHQ-9	371	15.38 (6.40)	6.94 (5.87)	-8.44 (6.53)	p<0.001	-1.29
AAQoL	293	34.03 (14.40)	65.67 (18.96)	31.64 (18.76)	p<0.001	1.69
GAD-7	64	9.78 (5.46)	4.89 (5.19)	-4.89 (6.52)	p<0.001	-0.75
Alcohol	404	6.80 (5.62)	4.90 (4.46)	-1.90 (3.89)	p<0.001	-0.49
Nicotine	148	2.28 (1.80)	1.78 (1.68)	-0.50 (1.80)	p<0.001	-0.27

Table 2. Mean (SD) and effect size of TSS (QbCheck), and different Questionnaire variables, at baseline and follow-up.

Variable	N	Pearson correlation (changes in TSS and changes in Variable)
SNAP/ASRS	633	0.3255 (p<0.001)
PHQ-9	371	0.2698 (p<0.001)
AAQoL	293	-0.4028 (p<0.001)

Table 3: Pearson correlation between change in TSS and change in each questionnaire variable.

Figure 1. Scatterplots and regression line between changes in TSS (x-axis) and changes in SNAP/ASRS (y-axis) (n=633)

Figure 2. Scatterplots and regression line between changes in TSS (x-axis) and changes in PHQ-9 (y-axis) (n=371)

Figure 3. Scatterplot and regression line between changes in TSS (x-axis) and changes in AAQoL (y-axis) (n=293)

Read study

Clinician resources

Patient developmental history and data gathering

A child's developmental history often holds early cues to behaviors typically associated with ADHD. Did you know, babies born before 33 weeks are two to three times more likely to develop ADHD?

Why patient developmental history is crucial for an ADHD diagnosis

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SEASON 3 EPISODE 4

Remote testing and medication management

Insufficiently treated ADHD negatively affects many consequences. Effective monitoring and treatment of ADHD is therefore preferable and would in turn improve functionality and quality of life of the individual.

Ready study

Absent or hidden? Hyperactivity in females with ADHD

Historically believed to be a condition that affects only males, this study explores how females with ADHD suffer equally from hyperactivity, challenging the notion of a sex-dependent presentation of hyperactivity.

Read study

ADHD and co-morbidities: getting clarity in complex cases

Trauma, autism, anxiety, and sleep problems; Many patients present with overlapping conditions that may muddy the diagnostic waters. Experts discuss triage strategies that protect patient safety without overloading the system.

ADHD and co-morbidities: getting clarity in complex cases

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SEASON 3 EPISODE 9

Clinical practice guidelines

DSM-5, ICD-10, ICD-11, NICE guidance

Feature	DSM-5	ICD-10	ICD-11	NICE guideline NG87
Diagnostic criteria	9 Inattention symptoms, 9 hyperactivity/impulsivity symptoms	Checklist-style descriptions of inattention, hyperactivity, and impulsivity symptoms	Descriptive symptom clusters	Refers to DSM-5 or ICD-11 criteria for diagnosis
Number of symptoms required for diagnosis in children	6+ inattentive and/or 6+ hyperactive-impulsive	No fixed number specified, but symptoms must be present across all 3 domains	No fixed number specified	Follows DSM-5 or ICD-11
Number of symptoms required for diagnosing adults/over 17s	5+ inattentive and/or 5+ hyperactive-impulsive	No fixed number specified, diagnostic criteria more child-focused	No fixed number specified	Follows DSM-5 or ICD-11
Age of onset requirement	Symptoms present before age 12	Onset in early childhood	Symptoms present before age 12	Follows DSM-5 or ICD-11
Settings	Impairment in 2 or more settings	Impairment in multiple settings	Impairment in multiple settings	Impairment in multiple settings, including 2 or more important settings
Comorbities	Covered in “Differential Diagnosis”	F90.1 diagnosis code for co-occurring conduct disorder. Limited detail on wider comorbidities	Covered in “Boundaries with Other Disorders”	Details on medication for people with coexisting conditions
Treatment guidance included?	No	No	No	Yes – medication, non-pharmacological treatment, monitoring, shared care all included

Clinical practice guidelines

DSM-5 criteria for adult ADHD

Table 1: DSM 5 criteria for Adult ADHD

DSM 5 criteria: adult ADHD

Criteria A	Five or more symptoms of inattention or hyperactivity/impulsivity
Criteria B	Several symptoms present by the age 12
Criteria C	Several symptoms present in two or more settings
Criteria D	Several interfere with or reduce quality of social, economical or occupational functioning
Criteria E	Symptoms are not better explained by another condition, such as mood disorder

DSM 5 ADHD symptoms: inattention

- **INATTENTION (nine symptoms)**

a) Lack of attention to detail, make careless mistakes

b) Difficulty sustaining attention

c) Does not listen when spoken to directly

d) Trouble completing or finishing jobs or tasks

e) Problems organizing tasks and activities

f) Avoids or dislikes sustained mental effort

g) Loses and misplaces things

h) Easily distracted

i) Forgetful in daily activities

DSM 5 ADHD symptoms: hyperactivity/impulsivity

- **HYPERACTIVITY (six symptoms)**

a) Fidgetiness (hands or feet) or squirming in seat

b) Leaves seat when not supposed to

c) Restless or overactive

d) Difficulty engaging in leisure activities quietly

e) Always 'on the go'

f) Talks excessively

- **IMPULSIVITY (three symptoms)**

g) Blurts out answers before questions have been completed

h) Difficulty waiting in line or taking turns

i) Interrupts or intrudes on others when they are working or busy

This table shows the criteria for an adult ADHD diagnosis as per DSM-5 guidelines