Remote objective ADHD assessment to monitor treatment effects as part of UK-based virtual healthcare service, ADHD 360

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Introduction

ADHD 360 is the largest virtual healthcare service in the United Kingdom specializing in the diagnosis and treatment of Attention-Deficit/Hyperactivity Disorder (ADHD). With a focus on delivering scalable, personalized care, ADHD 360 sought to address ongoing challenges in the field related to maintaining accessibility, consistency, and quality of care—areas increasingly scrutinized within ADHD service delivery models worldwide.

ADHD 360 incorporated QbCheck, a standardized, objective, and remote ADHD assessment tool, into their clinical workflow. The integration aimed 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 present study examines the implementation of QbCheck within a remote care framework, with particular focus on its utility in monitoring treatment outcomes and symptom progression over time in a virtual setting.

Methods

This dataset was collected from routine QbCheck assessments that were completed as part of the ADHD 360 healthcare model in the United Kingdom. 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. A total of five parameters were calculated to measure Inattention, Impulsivity, and Hyperactivity, and used to calculate a Total Symptom Score (TSS, range from 0 to 100), the probability of having ADHD. All patients were also given the ASRS/SNAP and QbCheck Rating Scale (QbRS) to assess self-reported symptoms. The post-hoc analysis evaluated the changes in test variables and test scores from their baseline and follow-up visit.

	Qb Metric	Pearson correlation (r) to SNAP/ASRS
Baseline	QbCheck TSS	0.1987 (p < 0.001)
	Qb Rating Scale	0.7354 (p < 0.001)
Follow-up	QbCheck TSS	0.3476 (p < 0.001)
	Qb Rating Scale	0.6681 (p < 0.001)

Table 1: Comparing the correlation of ASRS scores with the QbCheck Total Symptom Score and the Qb Raiting Scale at baseline and post-medication treatment follow-up.

Results

All subjects (aged 7-60 with mean=33.3 years, 55.2% females) were diagnosed with ADHD (N=382) and were prescribed and optimized on stimulant ADHD medication prior to the second QbCheck assessment. The average time between QbCheck baseline to follow up was 157.76 days (range 38-423 days). A significant improvement was found from baseline to post-treatment follow up in all five parameters (MicroEventX, Commission Errors, Omission Errors, Reaction Time & Reaction Time Variance) ($p<0.001$) (Figure 1).

There was a statistically significant improvement in TSS by 46.28% ($p<0.001$) alongside with a significant correlation between the improvement in Total Symptom Score and improvement in QbCheck Rating Scale ($r=0.38$, $p<0.001$), as well as with the ASRS/SNAP ($r=0.34$, $p<0.001$). Data of ASRS scores and correlation to TSS is given Table 1, and individual data sets of TSS at baseline and change in TSS at follow up are shown in Figure 2.

Conclusions

QbCheck demonstrated a significant correlation with commonly used subjective rating scales, supporting its validity as an objective measure of ADHD symptoms. Additionally, this study has highlighted the heterogeneity in patient responses to pharmacological treatment, underscoring its value in guiding individualized and adaptive treatment planning. Beyond diagnostic support, it has proven effective in informing treatment decisions by providing quantifiable data on symptom presentation and response. Importantly, it facilitates the remote monitoring of medication effects, symptom regulation, and overall treatment outcomes, which is essential in a virtual healthcare model such as ADHD 360.

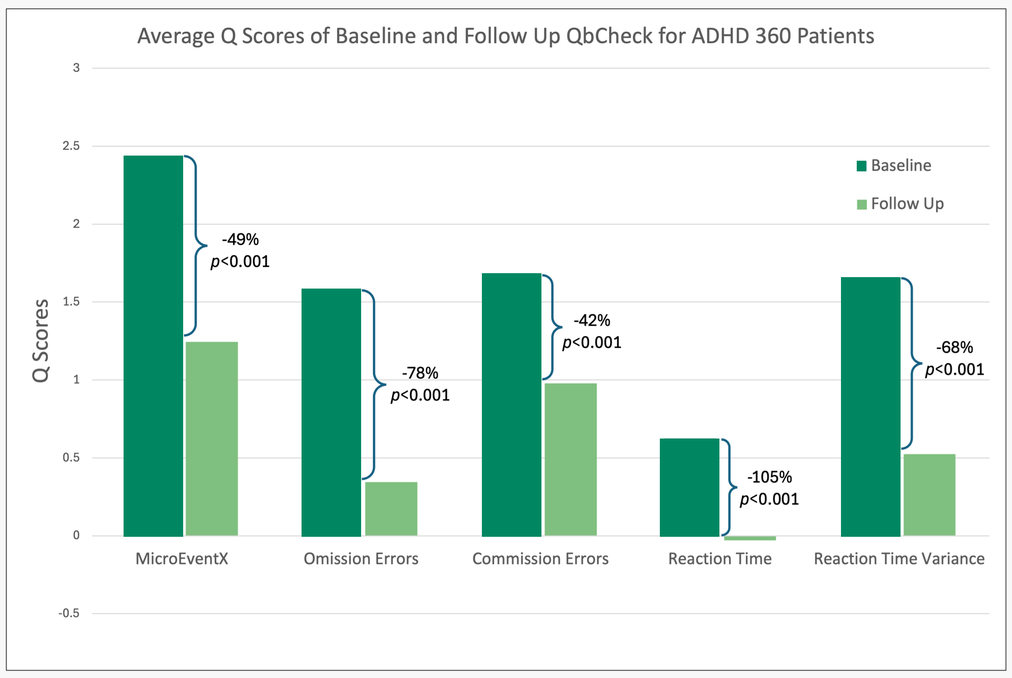

Figure 1: Comparing the average Q scores of each parameter at baseline and post-medication treatment follow-up assessment of QbCheck.

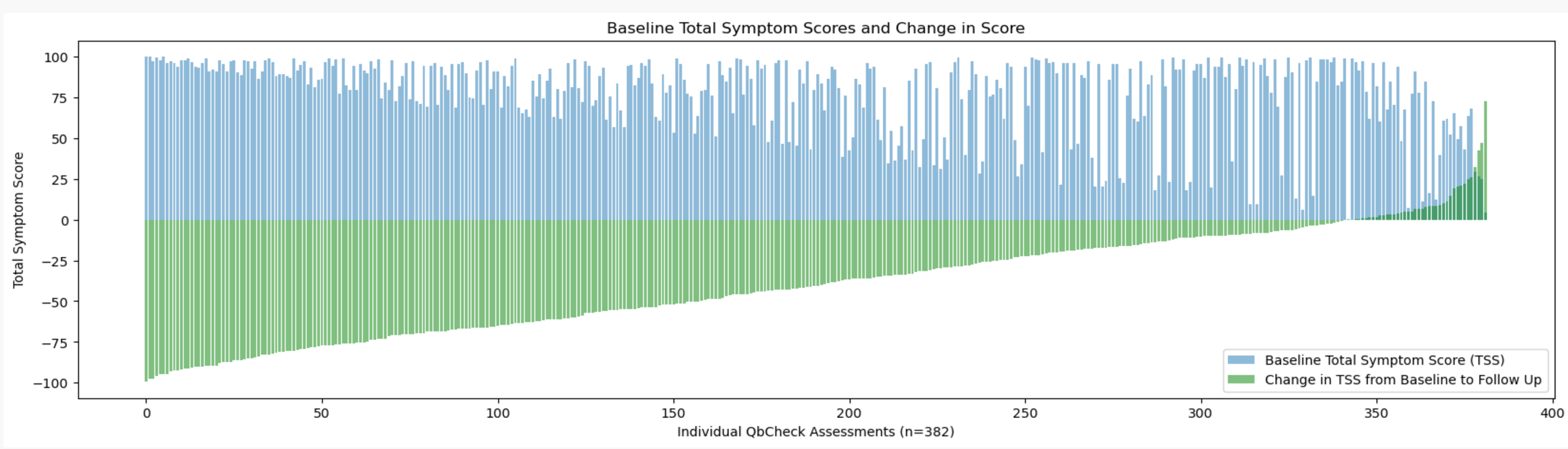

Figure 2: The individual data sets (N=382) of QbCheck Total Symptom Scores are shown at baseline along with their corresponding absolute change in Total Symptom Scores from baseline to follow-up assessments.

Conflict of interest:
Some of the authors are employed at either Qbtech AB, Stockholm, Sweden or Qbtech Inc., Houston, TX, USA, the company that manufactures QbCheck, or at ADHD 360.

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