BJPsych | The British Journal of Psychiatry (2026)
1–3. doi: 10.1192/bjp.2026.10758

Guest Editorial

Cognitive overload in the Attention Economy

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Summary

In recent years, adult diagnoses of attention-deficit hyperactivity disorder have risen sharply. Existing diagnostic frameworks appear unable to distinguish neurodevelopmental from environmentally mediated attentional deficit. Psychiatry requires a renewed clinical framework to recognise the impact of the modern information environment on human cognition. The advertising industry has already achieved this with precision.

Keywords

ADHD; Attention Economy; cognitive overload; commercial determinants of health (CDOH); advertising industry.

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Adult diagnoses of attention-deficit hyperactivity disorder (ADHD) have risen sharply in recent years. What has risen, strictly, is the rate at which the diagnosis is applied; whether this reflects a true increase in attentional difficulty or the retrospective relabelling of long-standing traits is the question needing to be addressed. In Australia, the numbers of psychostimulant consumers grew from approximately 107 000 in 2012 to more than 590 000 in 2023–2024, with prescribing rates rising from 5 per 1000 in 2013–2014 to 18 per 1000 in 2022–2023.[1] This growth is heavily adult-concentrated. Sawyer et al reported Australian childhood ADHD prevalence to be stable across two decades of data.[2] Others have argued that the post-2010 expansion is driven by lower diagnostic thresholds, several having been introduced with the shift from DSM-IV to DSM-5 (a symptom-onset age raised from 7 to 12 years, a reduced symptom-count requirement for adults and the removal of the exclusion for co-occurring autism), together with broader recognition of subthreshold presentations and shifts in the cultural recognisability of attentional symptoms, rather than by a rising true incidence in the population.[3] The conventional explanation for this trajectory is improved recognition of an under-diagnosed disorder; however, this explanation leaves a structural question unanswered. Over the same two decades, the environments in which attention is deployed have undergone a transformation unparalleled in human history: ubiquitous smartphone use, near-universal social media exposure, the redesign of everyday digital surfaces around engagement metrics and the maturation of a trillion-dollar advertising industry driven by the engineered capture and monetisation of human attention.[4]

The question is not whether ADHD exists: it is whether the diagnostic apparatus currently available to psychiatry is adequate to distinguish it from environmentally mediated forms of attentional dysregulation, plausibly produced by the normal limits of human attentional capacity being placed under chronic stress. If those states are phenomenologically convergent at the level of behavioural description but mechanistically distinct, descriptive nosology alone may be insufficient to tell them apart.

Working memory has a small and well-characterised capacity, in the range of approximately four to seven discrete chunks. Cognitive load theory demonstrates that when intrinsic, extraneous and germane load together exceed available capacity, comprehension, learning and sustained performance degrade in measurable ways. Task-switching costs are similarly robust: every transition between cognitive activities carries quantifiable temporal and accuracy penalties, even for well-practised tasks. Sustained attention deteriorates within minutes of demanding monitoring. None of this is novel cognitive science.

A clinically important and under-appreciated feature of this phenomenon is that self-reported cognitive difficulty often exceeds what standardised laboratory testing detects. Measures of everyday cognitive failure correlate with consequential real-world outcomes, including at-fault traffic accidents, occupational injury and academic underperformance, yet show only modest correlations with conventional laboratory cognitive measures. Longitudinal cohort evidence specific to digital exposure has more recently shown that screen time itself, considered as total exposure rather than fragmentation, is associated with both increased ADHD symptoms and reduced cortical volume in regions implicated in attentional regulation over a 2-year follow-up, with cortical volume partially mediating the symptomatic effect.[5] These findings do not establish causation, but they strengthen the argument that contemporary attentional environments deserve direct clinical measurement rather than being treated as background noise.

The conceptual distinction is between typical and optimal performance. Laboratory testing operationalises what an individual can do under structured, time-limited, motivated conditions; daily attention is what the individual does under continuous, unstructured, unmotivated cognitive demand. These are not the same construct. The patient's complaint and the laboratory test result are not noisy versions of the same signal: they are different signals entirely. The profession's standardised diagnostic assessment was not designed for, and may be structurally unable to distinguish, the variable that the patient is reporting. This matters because it offers a coherent explanation for a pattern increasingly familiar to psychiatric work: adults presenting with severe, disabling attentional difficulty that standardised assessment does not capture, but who are diagnosed with ADHD and medicated regardless, because that is the pathway the system makes available.

The information substrate against which human attention is now deployed has structural features that categorically differentiate it from earlier environments. It is fragmented at the level of individual content units, optimised through ongoing measurement of user engagement and designed to compete continuously for attentional capture across the working day. These are not incidental features: they are the products of an advertising industry whose commercial model depends on them. The term 'ultra-processed information' is proposed here as a working descriptor for this substrate, recognising it (as in the ultra-processed food literature) not by its content but by its structural and delivery properties.

Attention capture is not theoretical: research conducted by the advertising industry is publicly available. The Interactive Advertising Bureau and Media Rating Council released their Attention Measurement Guidelines in November 2025, establishing four

https://doi.org/10.1192/bjp.2026.10758 Published online by Cambridge University Press

standardised methodological classes, an accreditation pathway for measurement vendors and a certification process for measurement products.[4] Attention is defined in these guidelines by way of directly measured signals: eye-tracking resolved to the millisecond, heart rate variability, electroencephalography, galvanic skin response and pupillary dilation, combined with device-level engagement data. Major platforms now measure attention at fine temporal resolution and at scale, with industrial-grade infrastructure for testing, validating and optimising attention capture across billions of daily exposures. Psychiatry encounters the clinical sequelae of this commercialisation but possesses no analogous infrastructure for measuring exposure to it in practice. Diagnostic frameworks have not traditionally incorporated detailed environmental measurement of attentional fragmentation and exposure intensity into routine assessment.

Naming the substrate makes a question available that descriptive symptom criteria do not directly answer: if an information environment of this character produces measurable cognitive overload at population scale, what kinds of attentional impairment does it produce in those most exposed, and how would those be distinguished clinically from the neurodevelopmental disorder that psychiatry has spent decades characterising?

Two patterns require clinical differentiation. The first is neurodevelopmental ADHD: heritable, present from early childhood and comparatively better labelled by the existing diagnostic apparatus. Sawyer's prevalence stability data are consistent with this disorder being present in approximately the same proportion of children across two decades.[2] The second is what may provisionally be called 'environmentally mediated attentional dysregulation' (EMAD): sustained, sometimes severely disabling, attentional impairment in adults whose daily exposure to highly fragmented information environments places normal human attentional capacity under chronic stress. Neither pattern is novel as a clinical observation. What is novel is the proposal that the current diagnostic apparatus cannot reliably distinguish them. Others have recently proposed formalisation of this division as two ADHD subtypes: a classical, genetically driven form and an acquired, environmentally influenced one.[6] The argument here is deliberately different; it does not call for a new subtype or category: it holds that the existing apparatus cannot, in its current form, tell two different presentations apart. The deficit is one of measurement rather than of nosology. At the level of behavioural description, the two converge. Both present with difficulty sustaining attention to demanding tasks, susceptibility to distraction, working memory failures and a subjective sense of cognitive overload. The descriptive symptom criteria for adult ADHD are largely behavioural, and are framed in terms that are also descriptive of the attentional environment that the patterns share. At the mechanistic level they diverge. Neurodevelopmental ADHD is enduring, heritable and present from childhood. EMAD, by the framing proposed here, is characterised by adult onset, by sensitivity to magnitude and pattern of exposure and by at least partial responsiveness to exposure reduction. The clinical apparatus available to distinguish these patterns is largely descriptive, largely behavioural and largely framed in language that does not begin to attempt to separate them.

The diagnostic systems through which adult attentional complaints are routed were never designed for this differentiation problem. The DSM-5-TR criteria for ADHD specify behavioural symptom counts, duration thresholds and functional impairment, with the requirement that symptoms be present from before the age of 12 years. In clinical practice, that childhood-onset criterion is operationalised through retrospective self-report or informant report, instruments with documented limitations in reliability that tend to reinterpret current attentional difficulty as long-standing. Where the adult patient presents with severe adult attentional dysfunction, the retrospective reinterpretation of normal childhood inattentiveness as undiagnosed ADHD is not just clinically tempting: it is favoured by the structure of the available diagnostic apparatus. The available pathway directs the presentation towards a formalised diagnostic construct and an established pharmacological treatment. The alternative formulation, that the patient's current attentional environment is producing the dysfunction, has neither a recognised diagnostic name nor a defined treatment pathway. The category designed for a developmental disorder may increasingly be accommodating heterogeneous attentional presentations beyond its original scope.

This matters because the implications for management may diverge at the level of mechanism, sequencing and therapeutic emphasis, even where symptomatic management through pharmacotherapy has some role. Neurodevelopmental ADHD responds well to psychostimulant medication and the evidence base for this is robust. EMAD, if such distinctions prove clinically meaningful, could potentially respond to controlled reduction of exposure. Castelo and colleagues have recently demonstrated, in a randomised trial, that structured reduction in mobile internet access improves objectively measured sustained attention, with mediation analyses indicating a direct attentional effect rather than an indirect consequence of altered time use, sleep or social connection.[7] Where these patterns are not clearly differentiated, psychostimulant treatment pathways are applied across states that may differ meaningfully in mechanism, prognosis and optimal management. A common objection is that stimulants help regardless of diagnosis, such that the distinction makes little practical difference. The evidence does not support this. In healthy adults, prescription stimulants raise effort while lowering its quality: methylphenidate, dexamphetamine and modafinil made participants work harder yet attain lower value on a demanding task, reversing the usual ranking so that those who had performed best without psychostimulants performed the worst on them.[8] A medication that produces a subjective sense of enhancement across the population is not a diagnostic test, and the felt benefit of a stimulant trial cannot be read backwards as confirmation of ADHD. None of this argues against stimulant treatment where ADHD is present: it argues for better phenotyping before treatment pathways are selected.

That the modern advertising industry operates the Attention Economy, or that Dentsu, one of the world's largest advertising groups, opens its 2019 White Paper on it with the formulation 'advertising surplus = attention deficit'[9], are matters that have remained entirely outside of the psychiatric discourse surrounding ADHD. The advertising industry captures attention through increasingly sophisticated means, at the same time that the psychiatric profession questions why it is observing increasing rates of attention deficit. When only one of the two has calibrated an operational definition of what it seeks to address, the other should take note.

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First received 21 May 2026 UTC, final revision 7 Jul 2026 UTC, accepted 23 Jul 2026 UTC

Data availability

Data availability is not applicable to this article because no new data were created or analysed in this study.

Author contribution

D.R.A. is the sole author and was responsible for the conception, drafting and revision of this manuscript.

https://doi.org/10.1192/bjp.2026.10758 Published online by Cambridge University Press

Funding

This research received no specific grant from any funding agency, commercial or not-for-profit sectors.

Declaration of interest

None.

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