

for use in Europe, and a recent NICE briefing (2023) highlights its efficacy and safety. The evaluation also references positive results from randomised controlled trials (RCTs), showing Flow leads to better outcomes than placebo stimulation.

Methods: This service evaluation assessed the use of tDCS for treating depression in Community Mental Health Teams (CMHT) for patients who hadn't responded well to medication or wanted an alternative. After a clinical interview and assessment, eligible patients were offered the treatment. Outcome data was collected at baseline and again after 6 weeks, using the Montgomery–Åsberg Depression Rating Scale (MADRS). The treatment involved patients self-administering tDCS for 30 minutes, five times a week for three weeks, then three times a week for three more weeks, with option of continuing as needed. The “Flow” system also includes a lifestyle training app and symptom tracking, allowing patients and clinicians to monitor progress online.

The study used an open-label design without a control group, with 20 participants (12 males, 8 females), of whom 16 shared their progress on the online platform and were included in the analysis.

Results: We analysed 16 data sets, which showed the following **Results:** the average MADRS score at the initial assessment was 32. By week 6, 82% (12/16) of participants had improved on the MADRS scale, with 44% (7/16) demonstrating clinically significant improvement, marked by a reduction of more than 25% in their MADRS score.

Conclusion: These results indicate that tDCS portable device “Flow” treatment is a promising and valuable intervention for treating depression in adults in CMHT service.

Abstracts were reviewed by the RCPsych Academic Faculty rather than by the standard BJPsych Open peer review process and should not be quoted as peer-reviewed by BJPsych Open in any subsequent publication.

Head Injuries and Serial Killers: Explore the Link Between Head Trauma and Criminal Behaviour

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Aims: This research aims to investigate whether there is a significant correlation between head injuries and the development of violent, repetitive criminal behaviours, particularly serial killers. Examining the neurological and psychological factors associated with head injuries. This study seeks to understand better their influence on criminal tendencies and patterns of behaviour.

Methods: 1. Neuroimaging: This showed reduced amygdala and frontal cortex interconnection.

2. Documented cases of serial killers with a history of head injuries.

3. Nature and timing of head injury; behavioural changes post-injury.

4. Statistics from findings out of 11 serial killers that were studied.

Results: 1. Neuroimaging showed reduced amygdala and frontal cortex interconnection and decreased grey matter.

2. High-profile serial killers who had documented head injuries: Richard Ramirez, Glen Edward Rogers, and John Wayne Gacy. Arthur Shawcross, Fred West.

3. Nature: Richard Ramirez, aged 2; a dresser fell on him and aged 5 was knocked out by a swing in the park; both of these caused him to have epileptic seizures throughout his childhood (temporal lobe epilepsy). Glen Edward Rogers, aged 1–2, would rock back and forth,

continually banging his forehead against hard surfaces; Arthur Shawcross, aged 16, was hit in the head with a sports discus; and Arthur Shawcross, aged 19, fell off a ladder, concussing himself. Fred West, aged 17, had a motorcycle accident, and aged 19, was punched in the face, which led him to fall two floors, causing him to black out and frequently suffer from violent rages. Brain injuries before the age of 5 permanently disrupt the development of key foundational brain structures, whereas brain injuries in teenage years disrupt ongoing development, altering existing behaviour. Behavioural changes post-injury: emotional instability, social withdrawal, impulsiveness, and poor decision-making.

4. 80% of the most high-profile serial killers have had significant brain injuries.

Conclusion: The findings suggest that head injuries, especially those affecting specific brain regions, can lead to problems with impulse control, emotional regulation, and decision-making. Findings also suggest that timing plays a key role too. Early-life brain injuries, particularly during critical developmental stages, disrupt emotional and social development, whereas brain injuries during adolescence often impair impulse control and judgment. For example, the parts of Richard Ramirez's brain that were damaged were his prefrontal cortex and temporal lobe. These injuries link to his crime as his crimes escalated in brutality, his sadistic behaviour, and also his opportunistic and impulsive nature. Arthur Shawcross similarly, although his injuries were in adolescence, led to sexual deviance and compulsions leading to abnormal sexual behaviour.

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Nature-Based Learning and Autism: A Systematic Review of Autistic Children's Emotional Health and Behavioural Outcomes

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Aims: Autism Spectrum Disorder (ASD) is a complex neuro-developmental condition that affects social interaction, communication, and behaviour. Many children with ASD experience emotional dysregulation, heightened anxiety, and challenges in mainstream educational settings. Nature-based learning (NBL), including forest schools and outdoor education, has been proposed as an alternative approach that may support the emotional well-being and behavioural outcomes of autistic children. This systematic review examines the impact of NBL on children with ASD, focusing on emotional health, behavioural changes, and educational engagement.

Methods: A systematic search was conducted across four databases (PsycINFO, CINAHL, PubMed, and Embase) to identify primary studies examining the effects of NBL on autistic children. Additional sources, including grey literature and reference lists, were screened. Studies were included if they assessed behavioural, emotional, and educational outcomes in children under 18 years old diagnosed with ASD. Data were extracted and synthesized narratively to identify common themes.

Results: Eight studies met the inclusion criteria, comprising qualitative, quantitative, and mixed-methods research. Findings indicated that participation in NBL was associated with

improvements in emotional regulation, reduced anxiety, enhanced social interactions, and increased engagement in learning activities. Some studies also reported positive effects on attendance and independence. Parents and educators perceived NBL as beneficial, although concerns were noted regarding disruption or routines and challenges with implementation.

Conclusion: Nature-based learning appears to offer significant benefits for children with ASD, particularly in supporting emotional well-being and social development. However, variations in study methodologies and small sample sizes highlight the need for further large-scale research. Future studies should explore standardized outcome measures, long-term impacts, and strategies for integrating NBL into educational provisions, ensuring tailored support for children with diverse needs.

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Evaluating the Impact of a Digital Detox Intervention Among Medics in Coventry and Warwickshire Partnership NHS Trust

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Aims: The excessive use of digital devices and social media has been associated with stress, poor focus, and a decline in overall well-being. Healthcare professionals, often working in high-pressure environments, are particularly susceptible to these effects due to their reliance on digital tools for work and personal purposes. This study aimed to assess the feasibility, adherence, and outcomes of a two-week digital detox intervention among medical professionals, focusing on its impact on digital device usage, stress levels, productivity, and overall well-being.

Methods: Thirty medics were invited to participate in a structured digital detox programme. Participants were given the option to either completely abstain from using digital devices or reduce their overall usage, with a particular focus on limiting social media engagement. Surveys were conducted at three stages: before the intervention to capture baseline device usage and social media habits, during the intervention to assess adherence, and after the detox to evaluate outcomes. Participants were encouraged to document their experiences through diaries or video reflections. The collected data included quantitative measures (e.g., screen time, adherence rates) and qualitative feedback on participants' challenges and perceived benefits.

Results: Of the 30 invited participants, 24 (80%) agreed to participate in the digital detox, with 20 (83%) completing the two-week intervention. Pre-detox surveys revealed that participants spent an average of 5.5 hours daily on digital devices, with 40–50% of that time dedicated to social media. Post-intervention findings highlighted significant improvements, with 60% of participants reporting enhanced focus and productivity, 50% experiencing reduced stress levels, 40% noting improved sleep quality, and 30% engaging more in offline activities, such as hobbies and personal relationships.

However, challenges were reported, particularly during the initial stages, with 50% of participants experiencing restlessness or boredom. Furthermore, 20% found it difficult to balance the detox with work-related demands on digital tools, which limited their adherence. Despite these challenges, participants expressed

increased mindfulness and a reduced dependency on devices by the end of the detox.

Conclusion: This study highlights the feasibility and potential benefits of a digital detox intervention among medics. The findings suggest that reducing device usage can significantly improve focus, stress levels, and work-life balance. Future studies should explore personalised and sustainable detox strategies that account for the unique demands of professional and personal digital use.

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MIND-OUT: Medications in Intensive Care, Delirium and OUTcomes

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Aims: To investigate how anticholinergic burden of medications changes during hospital stay for Intensive Care Unit (ICU) patients and to review whether anticholinergic burden predicts delirium and mortality.

Delirium is a common cause of morbidity and mortality within ICU. Anticholinergic Burden (ACB) and Anticholinergic Effect on Cognition (AEC) tools are validated to assess anticholinergic effects from medication. Scores of ≥ 3 are associated with increased delirium and mortality. This study investigates anticholinergic burden from ICU admission through to hospital discharge.

Methods: Retrospective, ethically approved study of adults (N=6,305) admitted to ICU in University Hospitals Birmingham over 3 years (2021–2023). Subjects were excluded if <48 hours spent in ICU or readmissions (within a year). Both ACB and AEC tools were used to assess anticholinergic burden (AEC is more sensitive to the cognitive effects of medications). Timepoints assessed: ICU admission, ICU discharge, hospital discharge, and maximum score. We explored secondary outcomes including delirium and mortality. Research performed in collaboration with PIONEER (Health Data Research Hub for Acute Care).

Results: Median age 60.0 years, 61.9% male, and 71.6% of white ethnicity. Median time from hospital to ICU admission 17.1 hours, 86.3% emergency admissions. Median length of stay in ICU 5.2 days (19.2 days in hospital).

Difference in mean score from ICU admission to ICU discharge was +0.38 ($p<0.001$) for ACB, and +0.29 ($p<0.001$) for AEC; from ICU discharge to hospital discharge was −0.12 for ACB ($p<0.001$) and +0.36 ($p=0.005$) for AEC.

There was a significant rise in patients with high-risk scores (ACB or AEC ≥ 3): admission to ICU 9.9% had ACB ≥ 3 , and at discharge from ICU 19.9% ($p<0.001$), with no significant fall back at hospital discharge (18.9%, $p=0.229$). The AEC tool showed similar **Results:** admission to ICU, 4.9% of patients had AEC ≥ 3 and at discharge from ICU 10.5% ($p<0.001$). However, this tool showed a further rise by hospital discharge 12.3% ($p<0.003$). Delirium was inadequately recorded.

Results showed anticholinergic burden significantly increases following ICU admission. The proportion of patients with high-risk