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Aims: Emerging evidence suggests that disruptions in brain energy metabolism – including impaired insulin signalling, altered glucose utilization, and mitochondrial dysfunction – may contribute to psychiatric and neurodevelopmental disorders such as bipolar disorder, schizophrenia, depression, post-traumatic stress disorder (PTSD), and autism spectrum disorder (ASD).

Ketogenic metabolic therapies (KMTs) provide the brain with an alternative energy source in the form of ketone bodies, which have been hypothesized to restore metabolic balance and improve psychiatric symptoms. Here we review the potential therapeutic effects of KD for mental health.

Methods: A structured review of recent clinical research was conducted to evaluate the influence of KMT on psychiatric and neurodevelopmental disorders. Relevant studies were identified through a manual selection process.

Results: Across studies, KMTs were associated with improvements in both psychiatric and metabolic outcomes. Patients with severe mental illness – like schizophrenia and bipolar disorder – demonstrated symptom reduction, decreased psychotropic medication use, and, in some cases, remission. Individuals with metabolic impairments experienced resolution of metabolic syndrome criteria alongside psychiatric symptom improvements. Case series also indicate that KMTs may support symptom remission in depression and anxiety. Early clinical research and preliminary findings indicate the feasibility and potential benefits of KMTs in PTSD and ASD. Most studies monitored adherence to KMT through ketone testing, recognizing adherence as a key factor in achieving therapeutic outcomes.

Conclusion: These findings highlight the potential of KMTs as adjunctive treatments in psychiatry. Symptom improvements across mood disorders, PTSD, and ASD, along with metabolic benefits, warrant further clinical investigation. Metabolic psychiatry presents a novel approach to understanding and treating these conditions by targeting brain energy metabolism.

'Flow' Transcranial Direct Current Stimulation (tDCS) Device and On-Line Behaviour Therapy Training Software Used at Home for Perinatal and Maternal Loss Patients With Diagnosis of Depression

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Aims: 'Flow' is a transcranial direct current stimulation (tDCS) treatment for depression that patients use at home. Meta-analyses of randomised sham-controlled trials (RCTs) show tDCS is safe, easy to use, and associated with significant improvements in depressive symptoms and high rates of clinical response and remission relative to placebo sham stimulation. Flow is BSI and CE-marked for treating depression in the UK, with NICE guidance for use in the NHS.

Flow incorporates an evidence backed healthy lifestyle behaviour training software app, and depression symptom tracking that enables users and their clinicians to monitor progress/symptoms. Training modules on: 'Behaviour activation', 'Mindfulness', 'Exercise for your brain', 'An anti-depression diet', and 'Therapeutic sleep'.

In a first for the NHS, Northamptonshire Healthcare NHS Foundation Trust's (NHFT) Specialist Perinatal Mental Health and Maternal Loss Psychology Service offered Flow to their patients with a diagnosis of depression and evaluated the feasibility and impact.

Methods: The patient self-administers Flow tDCS treatment, sessions last for 30 minutes, and are repeated 5 times weekly for 3 weeks, and after the initial 3-week period, patients self-administer 3 sessions per week for 3 weeks, and then as long as required. Outcome measure data collection from baseline to 6-week follow-up point. Self-report measures used were depression: Personal Health Questionnaire (PHQ-9); health related quality of life: EQ-5D-5L; and real-world functioning: Work and Social Adjustment Scale (WSAS). In-depth interviews were undertaken with 14 patients.

Results: There has been high level of adherence in the 25 participants to treatment protocol. There has been statistically significant improvements in depression symptoms (large effect size), real-world meaningful functioning, and health-related quality of life. Reliable improvement and remission rates for PHQ-9 were 64% and 52% respectively. In in-depth interviews most participants described a positive impact on depressive symptoms, sleep, social life, and functioning.

Conclusion: Flow has been successfully integrated into Perinatal Mental Health and Maternal Loss Psychology Service depression treatment offer. It is important to offer NHS patients an evidence-backed alternative to existing depression treatments (antidepressant medication and talking therapies), many patients stop anti-depressants when they become pregnant, and many do not tolerate antidepressants side effects or wish to try due to side effects and withdrawal issues. Findings provide support for the approach of delivering both tDCS and on-line wellbeing behaviour therapy training to patients with experience of depression.

Does Socioeconomic Deprivation Lead to More Drug-related Deaths?

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Aims: Drug-related deaths are a tragedy, with socioeconomic deprivation associated with higher rates. Globally deaths have increased with most involving an opioid. We aimed to assess the rates and causes of drug-related deaths for a deprived city in Northern England, compared with the surrounding less deprived semirural county (with pockets of high deprivation) against national data. We want to assess whether there is an association of deaths with higher deprivation levels.

Methods: Drug-related deaths in 2022 were provided by Dr Copeland via the National Programme of Substance Use Mortality (NPSUM) using postmortem (PM) records. Two deaths did not have full postcodes, so not included where location was required. We assessed deaths against demographics, implicated drugs, prescribed medications, comparing with Indices of Multiple Deprivation (IMD) by postcode. Regional deaths were compared with Office for National Statistics (ONS) death rates. Statistical analysis via Excel.