

therapies into doctor-patient interactions to allow increased communication and understanding.

### Why Should ACT Work When CBT Has Failed? a Study Assessing Acceptability and Feasibility of Acceptance and Commitment Therapy (ACT) for Paediatric Patients With Chronic Fatigue Syndrome/myalgic Encephalomyelitis (CFS/ME)

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**Aims.** Paediatric chronic fatigue syndrome/myalgic encephalomyelitis (CFS/ME) affects 0.5–3.28% of children. NICE guidance recommends Activity Management, Graded Exercise Therapy or Cognitive Behavioural Therapy for fatigue (CBT-f). Approximately 15% of patients do not achieve full recovery within one year with current treatments. Acceptance and Commitment Therapy (ACT) is an effective treatment in many chronic illnesses. There are no studies investigating ACT for paediatric CFS/ME. This feasibility study aimed to assess if ACT is a feasible and acceptable alternative treatment when current treatment has not led to recovery.

**Methods.** This feasibility cohort study aimed to enrol a minimum of 12 participants aged 11–18 years with CFS/ME attending the Royal United Hospitals Bath NHS Foundation Trust Specialist Paediatric CFS/ME Service, who were still symptomatic after 12 months or 12 sessions of standard treatment and were offered six to 12 sessions of ACT. Retention and recruitment data were analysed. Participants were asked to complete questionnaires before, during and after treatment. A selection of participants and their parents were interviewed about their experience of the study. Interviews were analysed using thematic analysis.

**Results.** 19 participants (95% of those approached) were recruited. Only 4 participants of this hard-to-reach group did not complete treatment.

In almost all sessions participants reported that they felt ‘totally listened to in post session questionnaires (31/33 sessions).

Preliminary interviews (n = 12) indicate acceptability of ACT, with all young people and their parents stating that they thought ACT should be offered to this population. Participants particularly commented that the absence of thought challenging (used in CBT-f) was a positive element of ACT. Participant’s openness to try new approaches and altruistic desire to be in a study was noted. **Conclusion.** Recruitment data indicate that it is feasible to recruit and retain 11–18-year-olds with CFS/ME to a study offering ACT. Interviews with participants and parents were broadly positive suggesting ACT is an acceptable treatment in this population.

Results indicated that it is both feasible and acceptable to offer ACT to 11–18-year-olds with CFS/ME using this protocol, supporting the prospect of an RCT in this area.

### Examining Grey Matter Structural Abnormalities in Young People Exposed to Childhood Maltreatment and Peer Victimization

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**Aims.** Early-life interpersonal stress, particularly childhood maltreatment (CM), is associated with neurobiological abnormalities. However, few studies have investigated the neural effects of peer victimisation (PV). This study examines the common and specific associations between CM, PV and brain structural alterations in healthy youths.

**Methods.** Grey matter volume (GMV) and cortical thickness (CT) data were collected from 105 age- and gender-matched healthy youths (34 CM, 35 PV and 36 controls). Region-of-interest (ROI) and whole-brain analyses were conducted.

**Results.** For the ROI, the CM group had smaller GMV than controls in left IFG, bilateral anterior insula, postcentral and lingual regions, which were associated with higher emotional abuse, along with smaller insular GMV than the PV group. The PV group had smaller left lingual GMV than controls, which was positively associated with age of bully onset. At the whole-brain level, both CM and PV groups had smaller GMV than controls in a cluster comprising left post/pre-central, inferior frontal, insula, superior parietal and supramarginal gyri. The PV group alone had increased CT in a cluster comprising left superior frontal, anterior cingulate and medial orbitofrontal gyri, which was related to greater cyberbullying.

**Conclusion.** Early-life interpersonal stress from carers and peers is associated with common structural alterations of the inferior frontal-limbic, sensory and lingual regions involved in cognitive control, emotion and sensory processing. The findings of a CM-specific reduced anterior insular GMV and a PV-specific increased CT in the left medial prefrontal cluster is intriguing and underscores the unique negative effects of CM and PV, particularly cyberbullying.

### A Case-Control Study Measuring Mentalization in Individuals With PTSD Compared to Controls Using the STOMP Task

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**Aims.** Social cognition is impaired in a variety of psychiatric conditions; evidence for impairment in individuals with PTSD is increasing. Mentalization is one domain of social cognition that refers to the capacity to understand other people by ascribing mental states to them. The STOMP task (Spontaneous Theory of Mind Protocol) involves an individual watching two minutes of a silent video and describing what they see. As part of a wider project examining social cognition in PTSD, we aimed to find out whether mentalization in the STOMP task differs between patients with PTSD compared to controls.

**Methods.** 171 individuals undertook the task: 30 patients were recruited from centres in Cardiff and Bristol at the start of their psychological therapy; 141 controls were recruited through Prolific website. Participants watched a 2-minute silent video and were asked to write 7–10 sentences about the clip. Qualtrics software selected the video and collected the texts. The verbs of the texts were coded and given a score by PM

using the Mental-Physical Verb Norms (MPVN) method. MPVN was developed by Orr et al. 2019, to give a value to 250 commonly used verbs based on their mental or physical attributes (the higher the value, the more 'mental' the verb). The total score of each text was divided by the number of verbs scored to produce an average that reflects how much mentalization was used. An unpaired t-test was used to calculate the significance in difference between the means of the two groups.

**Results.** The overall average score of individuals with PTSD was higher than the controls (38.5 vs. 33.5,  $p$  value 0.0047). The median score of individuals with PTSD was 37.95 compared to 31.60 with an actual difference of -6.350 and a Hodges-Lehmann difference of -4.650. These results do not support the hypothesis that mentalization is impaired in patients with PTSD.

**Conclusion.** This case-control study suggests that mentalization could be enhanced in patients with PTSD compared to controls. These results should be interpreted as part of a wider project being undertaken on the topic of social cognition in PTSD. Further studies with more participants from the population of interest and larger sample sizes could produce more reliable results, together with an expansion of the number of verbs coded in the MPVN method.

### Campus Close-Down Came in Handy: Depression, Anxiety and Stress Among Sudanese Medical Students and Their Association With Brief and Extended Closure Periods

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**Aims.** To estimate the prevalence of depression, anxiety and stress among Sudanese medical students and investigate the relationship and impact of closure periods on depression.

**Methods.** A cross-sectional analytical study was conducted. Data were collected from 1676 enrolled students from 10 medical schools in the capital of Sudan - Khartoum- who faced complete lockdown and agreed to participate in online google form. A self-administered questionnaire containing depression anxiety and stress scale (DASS-42) and socio-demographic inquires was used.

**Results.** The chief responders were females 1158 (69.1%) while males were 518 (30.9%). The prevalence of stress symptoms was the highest (51.9%), followed by depression symptoms (49.8%) and anxiety symptoms (28.8%). 96 students attempted suicide (6%) and about 5 folds have suicidal ideation (27%). According to multiple binary logistic analyses, college closure time was significantly associated with decreasing chances of getting depression symptoms (OR: 0.39, 95% C.I: 0.21–0.70,  $p = 0.002$ ), while being a female, COVID-19 patient or having a family history of depression appeared to elevate depression, anxiety and stress levels. The impact of university closure on stress and anxiety is non-significant.

**Conclusion.** Depression, stress, and to a lesser extent anxiety are widespread among Sudanese medical students and suicidal ideation is noteworthy. All of these require serious and expeditious

interventions. Controversially, our findings suggest that university closure serves as a protective factor, relieving depression in medical students but not exaggerating it.

### Neuromodulatory Effects of Adjunctive High Definition Transcranial Direct Current Stimulation (HDtDCS) on Auditory Verbal Hallucinations in Schizophrenia Patients: A Sham Controlled Diffusion Tensor Imaging Study

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**Aims.** To see the neuromodulatory effects of adjunctive HD-tDCS on white matter connectivity by using Diffusion Tensor Imaging (DTI) in schizophrenia patients with Auditory Verbal Hallucinations (AVH)

**Methods.** This was a randomized, double blind, sham controlled study. 40 patients of schizophrenia with prominent auditory verbal hallucinations and 10 age sex matched healthy controls were selected. The patients were randomly assigned to 2 groups and were given active or sham adjunctive HDtDCS (Active Treatment = 10 sessions of 2 mA current applied for 20 minutes, twice daily for 5 days, at left temporo-parietal Junction (TPJ)); Sham treatment = 10 sessions of 1 mA current, twice daily for 5 days was applied for 30 sec at left TPJ). Fractional anisotropy of left arcuate fasciculus by Diffusion tensor imaging was assessed and severity of schizophrenia symptoms and auditory hallucinations were rated on PANSS and PSYRATS-AH at baseline, after 1st week (i.e. end of HDtDCS sessions) and 4 weeks after the end of the HDtDCS sessions). Patients received stable dose of antipsychotics for the total study duration (equivalent to or more than 400 mg of chlorpromazine) to eliminate confounding bias. Fractional anisotropy of left arcuate fasciculus by Diffusion tensor imaging was assessed in healthy controls. DTI data were analysed by DSI Studio software. Statistical analysis was done by SPSS version 25.

**Results.**

1. Both the patient groups were comparable with regard to socio-demographic variables and baseline clinical variables.
2. There was no significant difference in the values of Fractional Anisotropy in Left Arcuate Fasciculus among the patients and healthy controls at baseline.
3. The group receiving active adjunctive HDtDCS, showed significant improvement in the frequency domain of AVH over time, in time\*group comparison by repeat measure ANOVA with Mauchly's test of sphericity and Greenhouse-Geisser correction [ $p = 0.011$  and partial eta square = 0.129].
4. There was no significant difference in change in the Fractional anisotropy of the left arcuate fasciculus noted between the groups over time.
5. Application of HDtDCS was not associated with significant side effects, minor itching and mild burning sensation being the only reported side effects

**Conclusion.** Adjunctive active HD-tDCS to the left temporo-parietal junction showed a statistically significant improvement in frequency of auditory verbal hallucinations (AVH) in schizophrenia patients, when compared to sham stimulation.