

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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doi: 10.1192/bjo.2022.212

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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doi: 10.1192/bjo.2022.213

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.