

**Result.** The questionnaire for the medical professionals gained 62 respondents and the one for the general population had 122 respondents, with responses from multiple nations. Overall, COVID-19 has affected everyone's mental health to a degree, and all groups had reservations about disclosing their mental health issues to others. The medical professionals were especially reluctant to disclose mental illness to their patients, but were more comfortable when it came to disclosing mental illness to colleagues. The general population, however, was much more reluctant to disclose mental health issues to their colleagues. The general population were, on the whole, willing to listen to and help anyone who came to them with mental health concerns. Both groups surveyed showed reluctance toward disclosure to the wider community.

**Conclusion.** COVID-19 appears to significantly affect not only physical health, but mental health as well. There is at least some degree of stigma surrounding the disclosure of mental health issues. While most would be happy to help anyone who came to them with their mental health problems, there seems to be an attitude shift when people must contend with mental health issues of their own.

### Tolerability of a single IV administration of a methylene blue challenge in patients with bipolar disorder: preliminary data from a pharmaco-MRI study

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**Aims.** To summarise the tolerability profile following an infusion of methylene blue (MB), including subjective effects on mood and energy levels and haemodynamic changes, in patients with Bipolar Affective Disorder (BPAD).

**Background.** BPAD is associated with mitochondrial dysfunction and impaired cellular energy production. MB is proposed to enhance mitochondria function via rerouting electrons and intracellular reduction of oxidative stress, and is therefore a candidate compound for use as a probe to reveal alterations in brain oxygen metabolism in vivo in patients with BPAD. Although there are reports of MB used as treatment for BPAD, the tolerability and subjective effects of a single IV dose in this population has not yet been defined.

**Method.** Using a single-blind, randomised, within-subject design, 7 patients with BPAD on stable pharmacological treatment and 6 healthy controls (HCs) received an infusion of 0.5mg/kg MB and a placebo glucose solution one week apart. Visual Analogue Scales (VAS) assessing 'Mood' and 'Energy' levels were completed by 11 participants, and blood pressure (BP), heart rate (HR) and any subsequent side effects were recorded before and after infusions.

**Result.** A significant, albeit very small, effect of MB on 'Mood' levels relative to placebo was demonstrated, independent of groups (change relative to baseline: 5.5%  $\pm$  11 increase (placebo) vs -1.6%  $\pm$  9.5 reduction (MB);  $p = 0.027$ ). Although there was no effect of MB on energy levels in either group, there appeared to be a trend for a general group difference in 'Energy' levels across all trials, with lower ratings in BPAD patients ( $p = 0.058$ ).

There was a trend for significantly lower post-infusion HR relative to pre-infusion ( $-6.4 \pm 8.8$  bpm,  $p = 0.07$ ). Diastolic BP was higher ( $3.0 \pm 7.8$ mmHg,  $p = 0.039$ ). These effects were

independent of groups and drug. The most common side effect with MB was mild/moderate pain at infusion site ( $n = 10/13$ ), resolving within median 32.5 minutes (IQR 6-102), and discoloured urine in 7/13 subjects lasting median 44.5 hours (IQR 36-59). No difference in frequency of side effects reported between groups.

**Conclusion.** Although limited by small sample size, this tolerability analysis demonstrates an acceptable profile of effects of MB on subjective ratings and blood pressure, in both BPAD and HCs. Common side effects of discoloured urine and pain at infusion site are in line with previous reports in the literature. We observed a small effect of MB on mood ratings which could be related to the discomfort experienced during infusion.

### Virtual reality cognitive & functional assessment in psychosis

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**Aims.** To compare the MATRICS Consensus Cognitive Battery (MCCB) and a novel Virtual Reality (VR) task, called VStore, in assessing cognition and functional capacity (FC) in schizophrenia. We hypothesise that VStore reliably discriminates between patients and controls, correlates with the MCCB, and is well-tolerated. Additionally, VStore is expected to strongly correlate with FC measures.

**Background.** Cognitive and functional deficits in schizophrenia have a major impact on everyday functioning of patients. The gold-standard cognitive assessment is the MCCB, while the USCD Performance-Based Skills Assessment (UPSA) is used to assess FC in this patient group. Neither of which are without limitations. For example, both take a long time to administer, and the MCCB alone cannot give clear indications of FC. We propose the use of a novel VR task to simultaneously measure cognition and FC in a single assessment. VStore is a shopping task, which involves a verbal learning task followed by buying items from a predetermined shopping list in a virtual minimarket.

**Method.** Ten patients with schizophrenia or schizoaffective disorder and ten age/gender-matched healthy controls recruited from South London, completed the following assessments: VStore, MCCB, UPSA & Global Assessment of Functioning (GAF), and VR-Symptom Questionnaire (VRSQ); while controls only completed the VR task. To test whether VStore can differentiate between patients and controls we employed unpaired t-test. To explore associations between VStore Total Time, MCCB composite score and FC measures Pearson's  $r$  was used. Finally, mean differences between pre/post-VR symptoms scores were tested using paired t-test.

**Result.** There was a significant difference between patients and controls on the verbal learning task ( $t_{16.38} = -4.67, p < .001$ ), and total time spent completing the VR task ( $t_{11.41} = 2.67, p = .023$ ). In addition, VStore had a strong association with MCCB composite score ( $r = -.80, p = .010$ ). While both VStore ( $r = -.82, p < .001$ ) and MCCB ( $r = .77, p = .010$ ) had significant correlation with the UPSA, only VStore had a significant association with the GAF ( $r = -.68, p = .030$ ). Finally, VStore appears to be well-tolerated, causing no measurable side effects in the VRSQ (Pre-VR Mean = 12.1 [SD = 13.5], Post-VR Mean = 9.6 [SD = 11.5],  $t_9 = 0.49, p > .05$ ).