

work with the patient and the parent; attachment recovery was done to work out attachment breaks; promoting autonomy occupied the remainder of the therapy. According to the results of the work, it was possible to increase the BMI to 17 and significantly expand the list of foods in the patient's diet.

Conclusions: Study results demonstrate the effectiveness of ABT together with CBT in the treatment of the patient with ARFID. Developing interventions to improve attachment in the treatment of patients with ARFID can be an important component in improving treatment outcomes.

No conflict of interest

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P.0353

Study protocol: psilocybin as a treatment for anorexia nervosa: a pilot study

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Background: Anorexia nervosa is a serious and life-threatening eating disorder. It has the highest mortality rate of any psychiatric disorder, and fewer than half of those diagnosed reach full recovery. With the current absence of approved pharmacological treatments, there is a desperate need for novel treatment avenues to be explored. Recent clinical trials have demonstrated the safety and efficacy of psilocybin-assisted therapy in the treatment of depression [1,2], obsessive-compulsive disorder [3], addiction, and end of life psychological distress [2]. Additionally, a limited number of non-clinical studies have reported positive outcomes following a psychedelic experience in those with eating disorders [4,5]. Here we present an overview of the study protocol for a trial of psilocybin-assisted psychotherapy for anorexia nervosa. The trial has ethical and Medicines and Healthcare products Regulation Agency (MHRA) approval and is due to commence in 2021. Additionally, we outline how public patient involvement (PPI) has enriched our trial design.

Methods: The aims of this within-subject pilot study are: 1) to assess the feasibility and efficacy of treating anorexia nervosa with psilocybin, and 2) to use Magnetic Resonance Imaging (MRI) and electroencephalography (EEG) to examine the neuronal mechanisms underlying psilocybin treatment in this patient group. We will recruit 20 female participants (21–65 years old, body mass index (BMI) $\geq 15\text{kg/m}^2$) who have had a primary diagnosis of anorexia nervosa for 3 years or more, and who have found past treatments ineffective. Over a 6-week period, each participant will receive three doses of psilocybin (up to 25 mg) in a therapeutic environment. The enveloping psychological preparation and integration sessions will draw upon both psychedelic and anorexia nervosa therapeutic approaches, including an emphasis on support person involvement. There will be an extended, remote, follow-up period of 12 months. The two primary outcome measures for the study are: 1) the Readiness and Motivation Questionnaire (RMQ), and 2) the Eating Disorder Examination (EDE) and the Eating Disorder Examination Questionnaire (EDE-Q). Secondary outcome measures will include (but are not limited to) additional scales assessing eating disorder psychopathology, depressive and anxiety symptoms, psychological well-being and self-compassion. Neurophysiological outcome measures will be: 1) Functional (fMRI) brain changes, including a change in task-based blood-oxygen-level dependent (BOLD) response and resting-state connectivity, and 2) Induced changes in resting state EEG activity and an electrophysiological marker of neuronal plasticity. PPI focus groups with service users that were conducted in the lead-up to the study allowed for an exploration of possible barriers to participation and emphasised the importance of individual differences in defining recovery that we will explore with our future participants.

Discussion: This study will determine the safety and acceptability of psilocybin-assisted psychotherapy as an adjunctive treatment for anorexia nervosa. It is also hoped it will provide preliminary efficacy data, as an essential stepping-stone towards a subsequent Randomised Control Trial (RCT) that would test this treatment against a suitable control condition.

No conflict of interest

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Embodied cognition impairments in patients with anorexia nervosa: preliminary evidence from a controlled study

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Background: Patients with Anorexia Nervosa (AN) have difficulties in correctly estimate their body size and usually display a distorted and oversized body schema, which is a dynamic sensorimotor representation of the body mainly encoded in the parietal lobe [1]. According to the embodiment approach, the execution of many high-order cognitive functions relies on the sensory-motor system and body schema representation and thus could be altered in patients with AN. This preliminary study aimed to assess the performance of AN patients on three cognitive functions which are thought to be grounded in the body schema and rely on temporo-parietal networks: mental rotation of body images, visuospatial perspective-taking, and motor imagery. **Methods:** The sample included 28 patients with AN and 25 healthy controls (HC). Each participant performed a cognitive battery which included a modified Mental Rotation Test (MRT) with both 3D objects and human figures [2], the Object Perspective Taking Test [3], and the Test of Ability in Movement Imagery (TAMI) [4]. Differences between patients and HC in both accuracy and reaction times (RT) were tested using independent sample t-tests. Pearson's correlations between BMI and cognitive scores were estimated for the entire sample.

Results: In the mental rotation of human figures, patients with AN, as compared to HC, displayed significantly lower accuracy scores ($t=2.345$, $p=0.024$) and longer RT ($t=-2.572$, $p=0.014$). In the 3D object condition, on the contrary, no differences were observed between groups in neither accuracy ($t=0.822$, $p=0.415$) or RT ($t=-1.553$, $p=0.129$). In the Object Perspective Taking Task, patients displayed longer reaction times than HC ($t=-2.423$, $p=0.019$), however, no significant differences emerged between AN patients and controls in the accuracy scores ($t=1.718$, $p=0.092$). Similar results were obtained in the TAMI: although no significant group difference was observed in accuracy scores ($t=0.716$, $p=0.477$) patients with AN took longer than HC to complete the task, although not significantly ($t=-1.899$, $p=0.063$). Negative significant correlations emerged between BMI and RT in the perspective-taking task ($r=-0.375$, $p=0.006$) and in the MRT human figures condition ($r=-0.346$, $p=0.031$).

Conclusions: The results obtained in this preliminary study are consistent with our hypothesis. Indeed, patients with AN displayed more difficulties than HC in mentally rotating human figures and appeared to be generally slower in performing tasks requiring embodied cognition. Interestingly, the impairment seems to be limited to those tasks which specifically rely on body schema, as suggested by the fact that patients and HC performed similarly in 3D objects MRT. Although these results should be taken with caution given the small sample size, they provide preliminary evidence of impaired embodied cognition in patients with AN. This topic needs to be further investigated and the parietal lobe could become the target of new forms of interventions given also its association with body representation and social cognition, which are known to be impaired in patients with AN.

No conflict of interest

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P.0356

Bariatric surgery leads to potentially favourable changes in proteins associated with neurocognitive function related to the degree of weight loss

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Background: Obesity leads to insulin resistance resulting in glucose intolerance [1] but also has an important role in the pathogenesis of neurocognitive dysfunction by inducing a state known as brain insulin resistance [2]. This is thought to occur in part due to dysfunction in the adapter-insulin-receptor-substrate type 1 (IRS1) [1]. Evidence shows that obesity is associated with poor neurocognitive outcome and that bariatric surgery (BS) can lead to improvement in cognition which occurs in tandem with weight loss after BS [3]. It was previously shown that cognitive impairment was partly reversible in obese patients after BS [3], however, the ef-