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PAIN PERCEPTION IN BORDERLINE PERSONALITY DISORDER EXPLORED USING PMS

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Different experimental methodologies have been used to investigate pain perception in patients with borderline personality disorder (BPD) overall showing elevated pain thresholds (PT). We assessed PT, sensorial and affective components of pain processing in BPD patients and healthy controls using repetitive peripheral magnetic stimulation (rPMS) as a novel tool for provoking controlled aversive cutaneous sensation. In 10 BPD patients and 8 healthy women we assessed PT, cutaneous sensation, emotional valence and arousal level during rPMS at different intensities on two consecutive days. Additionally, inner tension level was assessed before and after each session.

We found significantly higher PT in BPD patients (91% of maximal output of stimulator, vs. 56% in controls); these measures were consistent among both days of assessment, showing a high intra-individual repeat-reliability. In BPD, PT correlated positively with motivational factors of non-suicidal self-injury (to avoid feeling of emptiness $r=0.823$, $p=0.023$; to punish oneself $r= 0.774$, $p=0.041$). All stimulation intensities used were discriminated similarly in both groups. However, emotional valence and arousal level did not vary with stimulus intensity in BPD patients. Furthermore, BPD patients were found to have higher baseline levels of inner tension than controls and, as opposed to controls, they experienced subjective relief after stimulation. Besides demonstrating a distinctive pattern of affective components of pain in BPD, the present study demonstrates that rPMS is a suitable and well-tolerated method for the assessment of pain sensation.