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# Affective Touch perception in Borderline Personality Disorder: a behavioral and psychophysiological approach

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## Abstract

Research on somatosensation in Borderline Personality Disorder (BPD) suggested a blunted processing of nociception which could foster self-injurious behaviors. Nevertheless, other submodalities of somatosensation, especially Affective Touch (AT), are still underexplored. Thus, 30 BPD patients and 30 matched healthy controls were enrolled in 4 consecutive experiments to investigate AT perception. In the first experiment, participants underwent a somatosensory battery assessing all the principal submodalities of somatosensation; results showed abnormal pain perception and tactile sensitivity in BPD patients, but no differences emerged neither for tactile acuity nor for AT. The second experiment investigated BPD patients' tactile pleasantness perception of stimulations delivered at CT-optimal velocity (i.e., 3 cm/s) with objects characterized by different textures, compared to controls; we found lower pleasantness ratings for soft objects and higher ratings for coarse and punctuate objects in BPD than in controls. In the third experiment, participants were free to select object, velocity and pressure to self-stimulate themselves in a pleasant way and results showed a higher rate of choice among coarse and punctuate objects and significantly higher pressure levels in the BPD group. Lastly, in the fourth experiment we explored the effect of AT on cardiac psychophysiological indices (HR, HRV, and interoceptive awareness) in BPD patients compared to control and we found a soothing effect of AT on all the considered indices in both groups. Results point to a preserved AT processing but also suggest a possible interplay between pleasure and pain systems in BPD.

**Keywords:** affective touch, borderline personality disorder, heart rate variability, pleasant touch, interoception

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