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Facial EMG responses to happy and angry expressions in boys with disruptive behavior disorders and normal controls.

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As children with disruptive behavior disorders (DBD) are known to be weak empathizers, the present study explored whether DBD boys are less facially responsive to emotional facial expressions. Facial electromyographic (EMG) activity in the zygomaticus major and corrugator supercilii muscle regions, and heart rate activity, were studied in 22 clinically referred 8-12-year-old DBD boys and 22 age-matched normal controls during exposure to dynamic happy and angry expressions. The happy and angry facial stimuli evoked distinct EMG response patterns, with increased zygomaticus muscle activity to happy expressions, and increased corrugator muscle activity to angry expressions. Furthermore, the corrugator (not the zygomaticus) muscle response pattern was significantly less pronounced for DBD boys than for normal controls. Attending to the emotional expressions was associated with equivalent cardiac deceleration in both groups, reflecting a similar orienting/attention response. Assuming that facial imitation is a factor in the process of emotional empathy, the present findings suggest that deficits in facial reactivity may play a role in DBD boys' impaired empathic responding.

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