ABSTRACT

The emotion regulation (ER) model of trichotillomania (TTM) has spurred the development of the most efficacious treatments available for the highly impairing disorder. Nonetheless, the transient nature of gains derived from these treatments indicates the need for advancement of the model. This pilot study investigated whether the extended process model of ER (Ochsner & Gross, 2014), a neurobiological model of ER, represents a valid conceptual framework for advancing understanding of ER in TTM. Briefly, this model suggests abnormalities in the intrinsic functional connectivity (iFC) of regions comprising a cognitive control system (i.e., the dorsolateral prefrontal cortex [PFC], ventrolateral PFC, dorsal posterior medial PFC, and dorsal anterior cingulate cortex) and a valuation system (i.e., the amygdala and insula) may underlie the overuse of physical behaviors (i.e., hair pulling) to modulate internal experiences that demarcates TTM.

In total, 6 adults with TTM ($M = 24.50$ years, $SD = 3.50$) and 6 without ($M = 19.50$, $SD = 1.38$) completed this pilot study. In their initial lab visit for the study, these participants completed several self-report measures and were assessed with various clinician-rated measures. Participants underwent resting-state functional magnetic resonance imaging scanning an average of 22.08 days after this first visit.

Results showed the participant groups significantly differed on self-reported ER difficulties, but only when self-reported anxiety and depression were not controlled. The participant groups did not significantly differ on iFC between or within the valuation and cognitive control systems, nor did they differ on iFC with any of the regions comprising these systems when anxiety and depression were controlled. However, analyses of data from the TTM group revealed several significant correlations between iFC between and within the valuation and cognitive control systems and self-reported ER difficulties, self-reported and clinician-rated TTM severity, and clinician-rated TTM impairment. The most robust were positive correlations between iFC within the valuation system and the tendency to use hair pulling to escape from unpleasant internal experiences.

This study suggests continued exploration of iFC in TTM is needed. Although this pilot study’s sample size precludes strong conclusions, the present findings suggest iFC within the valuation system may be particularly important in TTM pathology and, further, suggest treatments that reduce iFC between these regions may be beneficial for TTM. Future research should explore this hypothesis.