

Differences in brain activity between those with high and low self-esteem during internal conflict situations.

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INTRODUCTION:The stability of the idea of oneself depends on the stability of self-esteem. Internal conflict leads to a fall in self-esteem and intensifies protective maneuvers. According to Rosenberg (1965), people with high self-esteem are more secure about interpersonal relationships and tend to participate in more social activities than those with low self-esteem.

OBJECTIVES:The purpose of the current study is to determine the difference in the brain regions involved in protecting self-positivity during internal conflict situations between those with high and low self-esteem. In this study, we used event-related functional magnetic resonance imaging (fMRI). During fMRI scanning, subjects completed a version of the Implicit Association Test (IAT; Greenwald et al., 1998).

METHODS: Twenty-six subjects (14 males and 12 females) participated in this study. All were right-handed, as determined by the handedness scale (Chapman and Chapman, 1987). Before the scanning, we assessed explicit self-esteem in each subject using the Rosenberg Self-Esteem Scale (Rosenberg, 1965). The scale is a 10-item self-report measure of global self-esteem. Based on the Rosenberg scores, we divided subjects into two groups: low and high self-esteem groups.

RESULTS:The mean Rosenberg score in the high self-esteem group (n=13) was 21.2 and that in the low self-esteem group was 16. The right ventromedial prefrontal cortex, bilateral orbitofrontal cortex, and left inferior frontal gyrus were found by fMRI to be active in the low self-esteem group. On the other hand, the bilateral frontal pole, anterior/posterior cingulate gyrus, left temporal pole, posterior superior temporal sulcus, and basal ganglia were active in the high self-esteem group ($P < 0.001$, uncorrected).

CONCLUSION:The differences in brain activity observed in this study were thought to be the neural basis of differences regarding self-positivity and related behaviors between people with high and low self-esteem.

CONTRIBUTION TO THE EVIDENCE BASE OF OCCUPATIONAL THERAPY :This study provides a neural basis of self-positivity related to one aspect of self-efficacy.