

Interventions Targeting Neural Correlates Associated with Persuasion and Social Influence

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Health communications can be an effective way to increase positive health behaviors and decrease negative health behaviors. However, developing effective interventions remains a difficult task. Thus, one question is whether information from the brain can be used to inform health interventions? The current research examines this from two different perspectives.

Study 1: The first approach focuses on targeting key processes associated with persuasion. We examined whether cannabis warning labels can reduce neural activity in subjective valuation regions, key regions associated with persuasion and behavior change (Falk et al., 2018), during cannabis advertisement exposure among at-risk youth. To answer this question, the current study recruited 40 at risk youth (18-24 years old) that scored greater than 2 on the CUDIT ($M=24.38$, $SD=7.78$). Participants were exposed to 60 social media cannabis advertisements randomly paired with 1 of 9 pictorial warning labels or with no warning label. Results revealed that cannabis ads paired with warning labels were significantly associated with decrease neural activity in subjective valuation compared to cannabis ads alone, $p<.05$. These results suggest that warning labels target key mechanism associated with persuasion and behavior change.

Study 2: The second approach focuses on identifying potential targets for intervention. Here we are examining whether neural processes associated with social connection moderate the relationship between social media use and risk behaviors (e.g., vaping, alcohol, cannabis) among teens. To answer this question, we are recruiting 150 teens (13-15 years old) to participate in a 2-year study that will measure risk behaviors at 0, 12, and 24 months, measures of neural reactivity during Cyberball (i.e., social inclusion and exclusion) and peer feedback (i.e., positive, negative) at 6 and 24 months, and continuously measuring social media (e.g., peer comments, likes, number of friends or followers) use for 24 months. We hypothesize that participants who show greater reactivity in social pain regions during negative social experiences (i.e., exclusion, negative peer feedback) will show a more negative relationship between social media use and risk behaviors. In addition, participants who show greater reactivity in reward regions during positive social experiences (i.e., inclusion, positive peer feedback) will show a more positive relationship between social media use and risk behaviors (Cascio et al., 2023).

Discussion: The current research highlights two approaches that use information from the brain to inform health interventions. The first focuses on determining whether interventions target key neural processes associated with persuasion and behavior change. The second aims to identify potential cognitive processes that can be targeted for future interventions.

References:

Falk, E., & Scholz, C. *Annual review of psychology*, 69, 329-356. (2018); Cascio, C. N., Selkie, E., & Moreno, M. A. *JMIR Research Protocols*, 12(1), e50984 (2023).

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