How We Regulate Emotions: Insights from Mind, Body and Brain

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1 Introduction

Emotion regulation refers to processes by which individuals modify their emotional experience, expression and physiological responses, while emotional responses are reflected in self-reported arousal and corresponding physiological measures. The aim of this ongoing study is to examine how different emotion regulation strategies influence physiological responses, brain activity and subjective emotional experience during the viewing of neutral and negative visual stimuli. To address this aim, participants are currently completing a validated emotion regulation task, allowing for comparison of the effects of various strategies. The research question is: "How do emotion regulation strategies differ in their ability to modulate individuals' subjective, physiological and neural responses to neutral and negative stimuli?". We expect cognitive reappraisal and distancing to reduce negative affect and arousal, compared to passive viewing, while expressive suppression may have weaker effects on subjective experience but still reduce outward expression (Zaehringer et al., 2020) The findings may help identify effective emotion regulation strategies for clinical and everyday settings (Scheffel et al., 2021)

2 Methods

The study uses a laboratory-based experimental design to examine emotion regulation through behavioural and physiological measures. To date, 41 participants viewed neutral and negative images across nine blocks of 30 trials. Participants rated valence, arousal, and perceived effort after each image. Participants were divided into three groups, with each group completing passive viewing and two of the three strategies: cognitive distancing, cognitive reappraisal or expressive suppression. This design was chosen to enable comparisons between the strategies while ensuring that each participant completed a manageable number of trials. During the task, physiological responses were continuously recorded using electroencephalography (EEG), electrocardiography (ECG), electrodermal activity (EDA), electromyography (EMG), respiration measures, pupillometry, and eye-tracking. Multiple physiological measures were included to provide objective indices of emotional responding. After the task, participants completed a guided relaxation procedure, mood assessments, and debriefing.

3 Results

As data collection is ongoing, no results are currently available. Based on previous research, we expect reappraisal and distancing to be associated with reduced negative affect and neural reactivity, whereas suppression may require greater cognitive effort and produce weaker effects on subjective experience. (Scheffel et al., 2021)

4 Discussion

A primary limitation is the laboratory setting, which may not fully capture spontaneous emotion regulation in daily life and the use of static visual stimuli may not reflect real-world social interactions. Additionally, the sample, made almost entirely of psychology students, may introduce bias and limit generalizability to broader populations. If supported, the expected findings would suggest that emotion regulation strategies differ in their effectiveness, cognitive demands and underlying physiological and neural mechanisms (Scheffel et al., 2021) Integrating subjective, neural and physiological measures may provide a more comprehensive understanding of emotion regulation.These findings may help identify effective emotion regulation strategies that can be applied in clinical, educational and everyday settings to support emotional well-being.

References

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