

## Benefits of Butterfly Tapping on Emotional Reactivity and State Anxiety: an ERP Study in University Students

Friday, September 12, 2025 12:30 PM (1h 45m)

**Introduction:** The ability to regulate emotional responses is essential for university students, frequently exposed to high-levels stressors that affect their well-being and cognitive functioning. Butterfly Tapping (BT) is a self-administered form of bilateral alternating stimulation, originally introduced in clinical settings to promote emotional regulation. Despite its clinical relevance, its neurophysiological effects remain poorly explored.

The study investigated the effects of BT on emotional reactivity and state anxiety, measured by changes in LPP amplitude.

**Methods:** EEG was recorded at T0 and T1 while participants performed an Emotional Simple Reaction Time (E-SRT) task, involving negative and neutral images. Different image sets were used at T0 and T1. Thirty-two healthy, right-handed university students (age 18–40) were randomly assigned to the experimental or the control group. Between sessions, the experimental group performed 15 minutes of self-administered BT, while the control group maintained the same crossed-hands posture without tapping. State anxiety (STAI-Y1) and emotional discomfort (VAS) were assessed. The LPP was calculated as the difference between ERPs elicited by negative and neutral stimuli.

**Results:** The experimental group showed a significant reduction in LPP differential amplitude from T0 to T1 ( $p = .018$ ), whereas no significant changes were observed in the control group. Furthermore, self-report measures suggested a non-significant trend toward reduced anxiety and discomfort following BT.

**Discussion:** These findings provide preliminary neurophysiological evidence that BT may facilitate emotional regulation by attenuating cortical responsiveness to negative stimuli. Furthermore, the effect persisted despite the use of novel images, suggesting a generalized reduction in emotional reactivity.

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No

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**Session Classification:** Lunch and poster 2

**Track Classification:** Emotions and motivation