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## **MIND-BODY INTERACTIONS IN WRITING (M-BW): PSYCHOPHYSIOLOGICAL AND LINGUISTIC SYNCHRONOUS CORRELATES OF EXPRESSIVE WRITING**

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**Background:** The bodily manifestations of the mind while writing have barely been studied. Expressive writing is a particular form of writing in which a person narrates a personal deeply charged emotional event, typically a major trauma. Expressive writing has been associated with a considerable number of health benefits. These positive benefits might be due to an opportunity for increased emotion regulation during expressive writing.

**Aims:** In the two empirical studies of the M-BW project, we sought to explore emotion regulation during expressive writing as reflected on electrodermal activity (EDA), heart rate variability (HRV), handwriting activity and emotional vocabulary usage.

**Method:** Following the procedure approved by the Ethics Committee of the University of Porto, participants were recruited from undergraduate psychology classes. In each experiment, participants were randomly assigned to one of two groups, the expressive writing group or the control group. Participants replied to several questionnaires and critically completed a writing task that was logged with HandSpy (Alves et al., 2019), while EDA and ECG were also recorded.

**Results:** Relative to the control group, the participants in the expressive group showed increased SNS activation during and after writing, as measured by HRV. As expected, both groups showed increased SNS and PNS activation from baseline. Interestingly, expressive writing participants paused for longer than the control group. Moreover, the longer the pauses, the higher the overall and PNS mediated HRV, and the lower the SNS activation after the writing exercise.

**Conclusions:** Both ANS and handwriting activity results suggest that mechanisms of emotional regulation seem active during expressive writing. Content analyses of the expressive texts showed that most participants seem to be using written language as a way to reappraise the traumatic event. These findings are a step forward in the study of expressive writing as a useful exercise for improving physical and psychological well-being.

**Keywords:** Emotional regulation, Expressive writing, Handwriting, Electrodermal activity, Heart rate variability

### **Publications:**

Alves, R. A., Leal, J. P., & Limpo, T. (2019). Using HandSpy to study writing in real time: A comparison between low- and high-quality texts in grade 2. In E. Lindgren and K. P. H. Sullivan (Eds.), *Insights from Keystroke Logging and Handwriting* (pp. 50-70). Leiden: Brill.

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