
Figures and figure supplements

Diminished responses to bodily threat and blunted interoception in suicide attempters

Danielle C DeVille et al

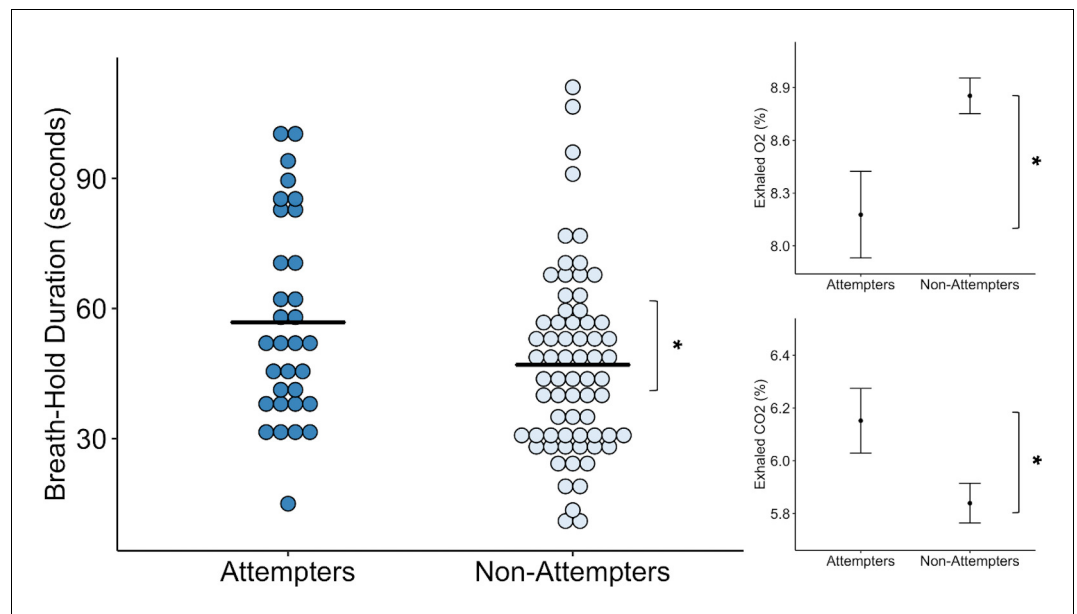


Figure 1. Suicide attempters held their breath significantly longer than non-attempters during the inspiratory breath-hold challenge (approximately 10 s on average). They also exhibited greater increases in carbon dioxide (CO₂) and decreases in oxygen (O₂). The mean breath-hold duration across the two trials is displayed below. Error bars indicate + / - 1 standard error, * $p < 0.05$.

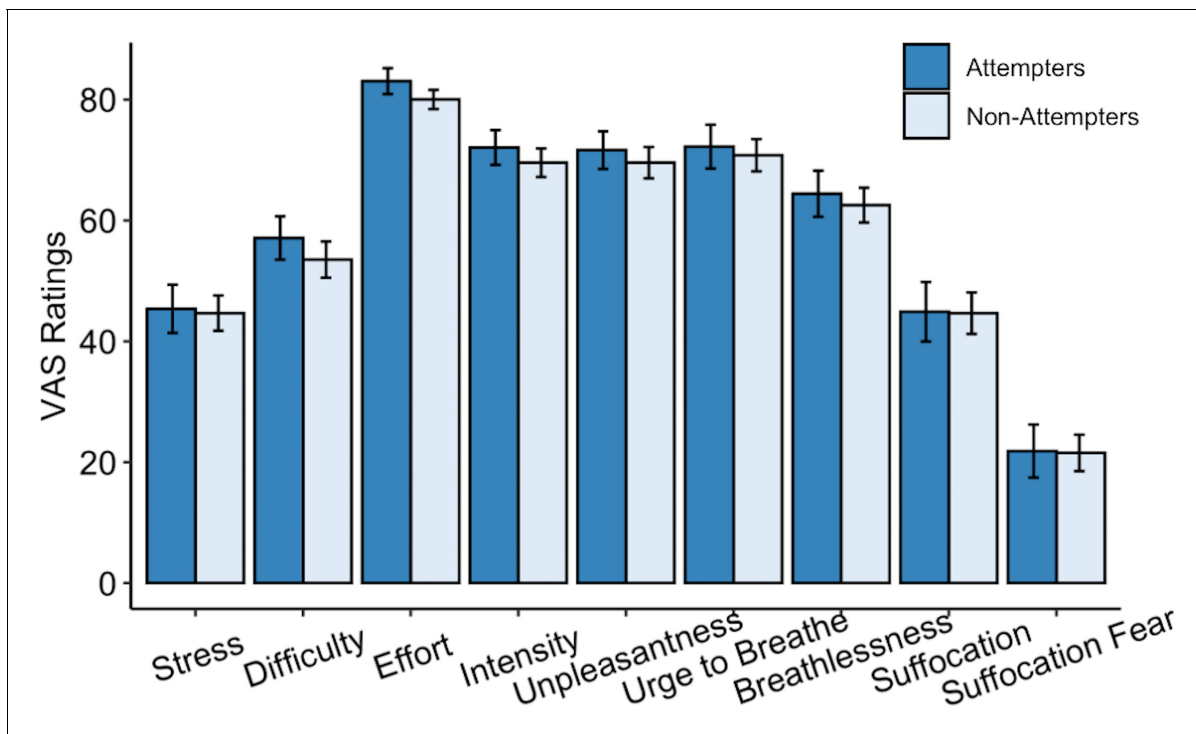


Figure 1—figure supplement 1 . Suicide attempters and non-attempters exhibited no differences in symptom ratings following the breath hold task.

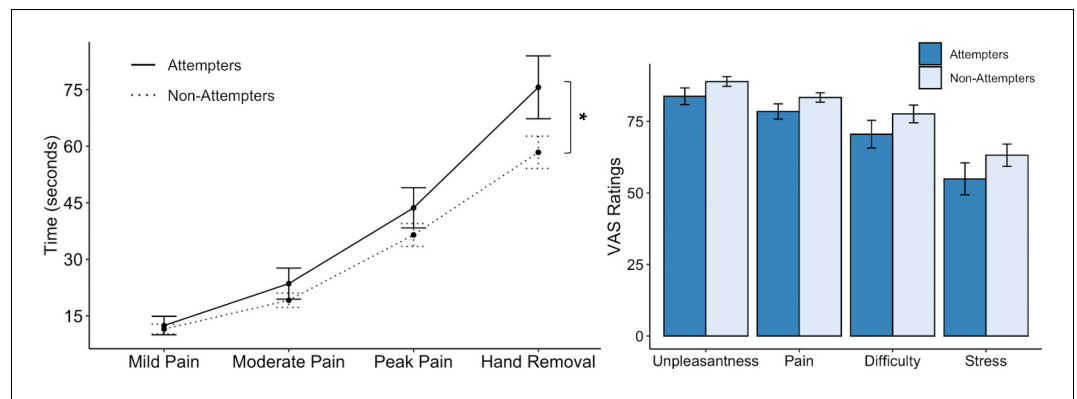


Figure 2. Suicide attempters exhibited significantly greater pain tolerance than non-attempters during the cold-pressor challenge. However, they did not significantly differ in their retrospective ratings of overall pain, unpleasantness, difficulty, or stress experienced during the task. Error bars indicate ± 1 standard error; * $p < 0.05$.

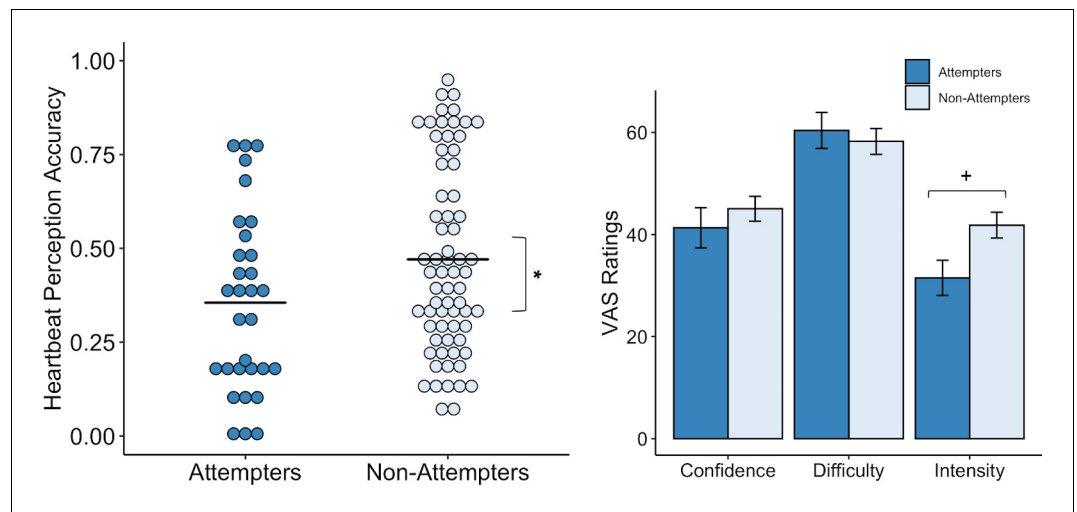


Figure 3. Suicide attempters exhibited significantly lower heartbeat perception accuracy than non-attempters during the no-guess and breath-hold perturbation conditions. There were no perceived differences in reported in task difficulty or confidence in performance across the no-guess and perturbation conditions. Suicide attempters also provided lower ratings of heartbeat intensity across these conditions, although this was no longer significant after correction for multiple comparisons. Error bars indicate + / - 1 standard error; * $p < 0.05$, + $p < 0.10$.

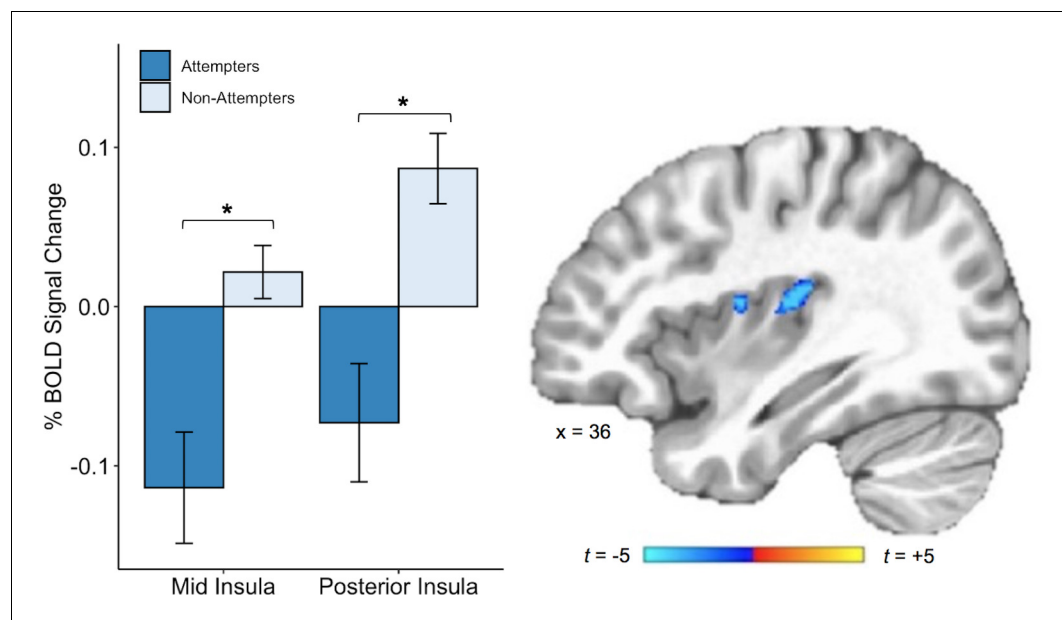
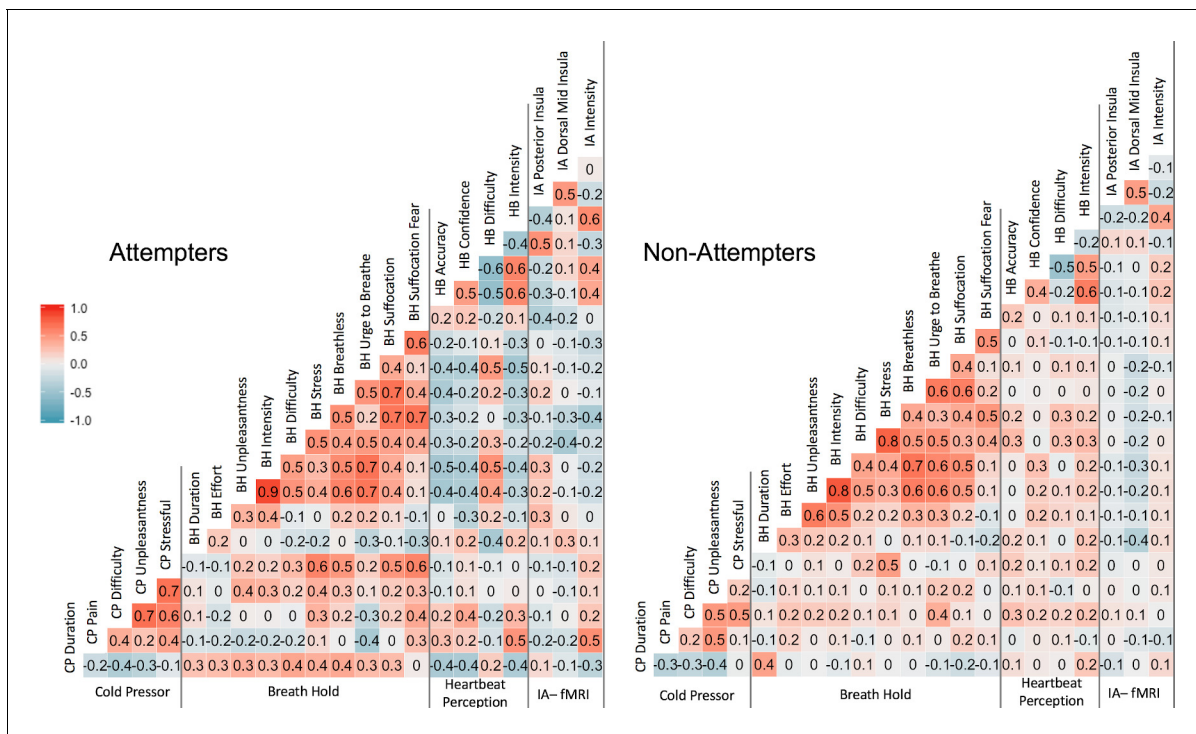
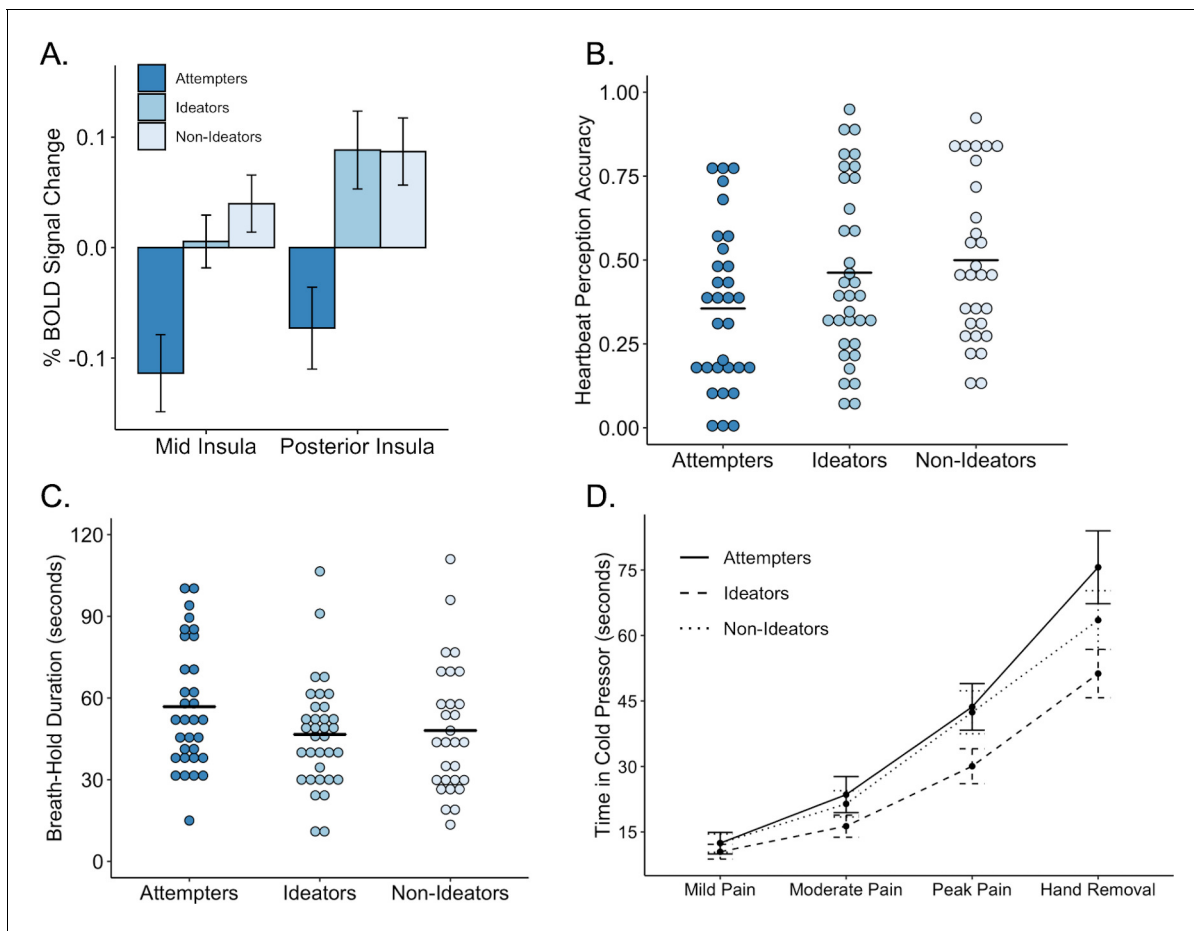


Figure 4. Suicide attempters exhibited lower blood oxygen level-dependent (BOLD) signal in the right posterior and mid insula than non-attempters during attention to heartbeat sensations (relative to the exteroceptive condition; $p < 0.005$, ACF corrected at $\alpha < 0.05$). Error bars indicate ± 1 standard error.



Appendix 1—figure 1. Pearson correlation coefficients across measures. ‘CP’ = cold-pressor, ‘BH’ = breath-hold (computed using participants’ mean duration and VAS ratings across trial 1 and trial 2, ‘HB’ = heartbeat perception task (computed using the mean of the no-guess and perturbation conditions). IA-fMRI = interoceptive attention to heartbeat sensations during fMRI.



Appendix 2—figure 1. Performance on interoceptive measures across three groups: suicide attempters, suicide ideators, and non-ideators. **(A)** During attention to interoceptive sensations (vs. exteroceptive sensations) suicide attempters exhibited lower blood oxygen level-dependent (BOLD) signal in the right dorsal mid insula compared to ideators ($p = 0.004$) and non-ideators ($p < 0.001$). Suicide attempters also exhibited lower BOLD activation in the posterior insula relative to ideators ($p = 0.001$) and non-ideators ($p = 0.002$) during interoceptive attention. **(B)** Suicide attempters exhibited lower levels of heartbeat perception accuracy relative to that of ideators ($p = 0.012$) and non-ideators ($p = 0.007$) during the no-guess and perturbation trials of the heartbeat perception task. The mean of the no-guess and perturbation trials is illustrated. **(C)** There was no significant difference between attempters and ideators ($p = 0.062$), nor between attempters and non-ideators ($p = 0.110$) in breath hold duration across trials. **(D)** Relative to ideators, suicide attempters sustained the cold pressor longer after reaching peak pain ($p = 0.001$); no significant differences were observed between attempters and non-ideators ($p = 0.074$). Error bars indicate + / - 1 standard error.