

Dissociating Self-Reported Interoceptive Accuracy and Attention: Evidence from a Portuguese Community Sample



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BACKGROUND

The **2x2 factorial model of interoception** (perception of one's internal bodily states) has been recently proposed as a promising framework to measure individual differences in interoception.¹⁻³ The first factor addresses the interoception domain being measured, namely **interoceptive accuracy or attention** (the degree we can accurately perceive our true bodily states vs. the extent to which interoceptive inputs are the target of our attention), while the second factor distinguishes how it is being measured, that is, using **self-report or objective measures of interoception** (beliefs vs. performance).

GOAL

To examine the **association between self-reported interoceptive accuracy and attention**. We hypothesized: (1) no significant correlation between self-reported interoceptive accuracy and attention; (2) self-reported interoceptive accuracy quadratically associated with self-reported interoceptive attention (U-shaped pattern); (3) alexithymia should be differentially related to self-reported interoceptive accuracy and attention (negative vs. positive correlation, respectively) according to a previous meta-analysis.⁴

METHODS

This study was preregistered at <https://osf.io/5jhcw> and <https://osf.io/ktzpc>.

Participants: Community sample (n = 515, M_{age} = 30.74 years, 40.39% male)

Instruments: **Interoceptive Accuracy Scale**² (IAS), indexing self-reported interoceptive accuracy, **Body Perception Questionnaire - Body Awareness**⁵ (BPQ), indexing self-reported interoceptive attention, **Toronto Alexithymia Scale**⁶ (TAS), indexing alexithymia (difficulties to identify, describe, and interpret one's own emotional experiences).

Statistical analysis: Pearson correlations, Steiger's Z-test for comparing two dependent correlations, polynomial regression analysis, and two-lines testing approach⁷.

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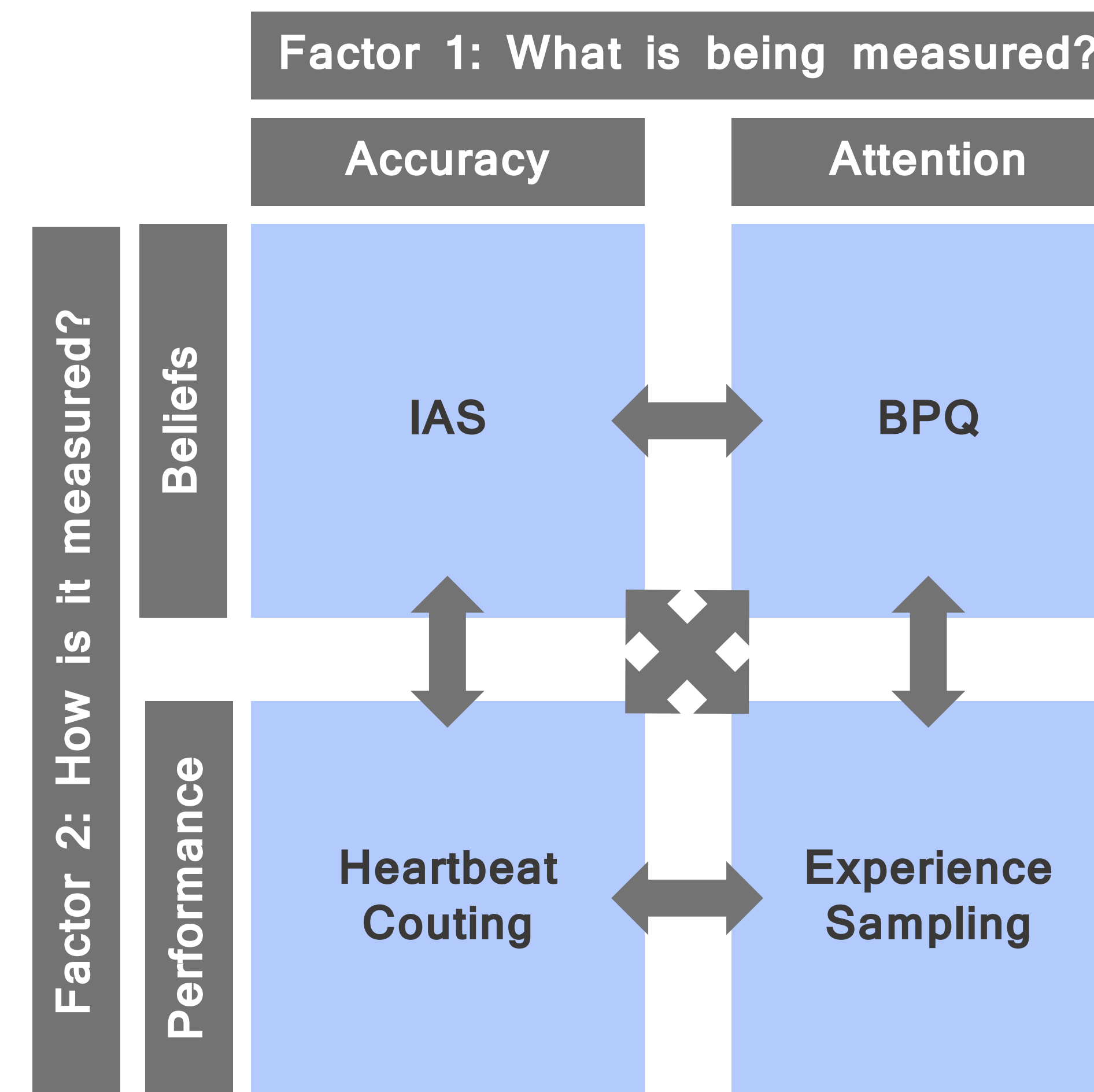


Figure 1. The 2x2 Factorial Model of Interoception Adapted from Murphy et al. (2019)

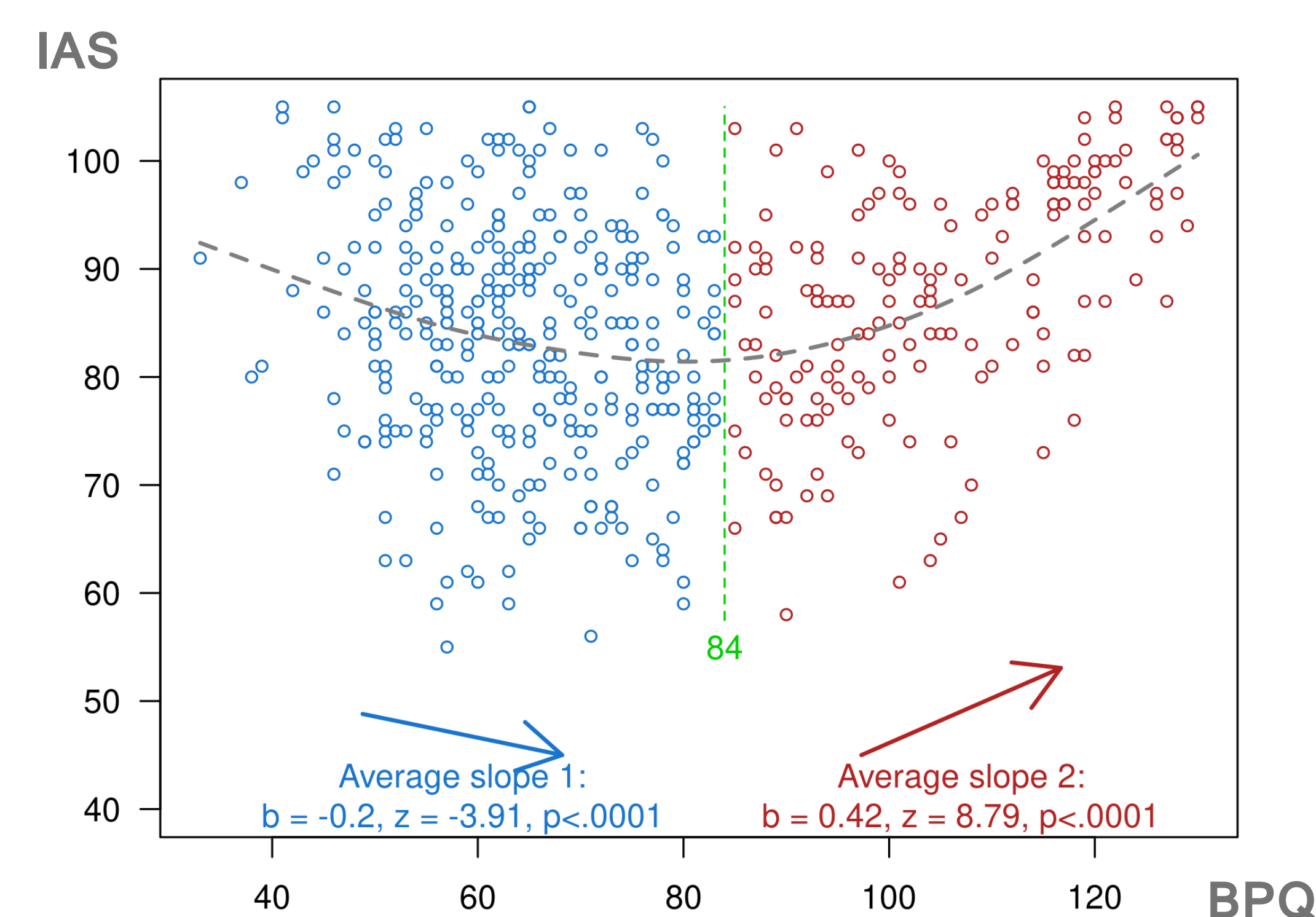


Figure 2. Quadratic U-Shaped Association Between Self-Reported Interoceptive Accuracy and Attention

MAIN FINDINGS

Contrary to our hypothesis, **IAS was positively correlated with BPQ**, $r = .204$, $p < .001$, $CI_{99\%} = [.084, .316]$. The linear regression model indicated that IAS was a significant predictor of BPQ, $R^2 = .042$, $F(1,513) = 22.301$, $p < .001$. The addition of **the quadratic term explained an additional 12.7% of variance in comparison to the linear model**, $\Delta R^2 = .127$, $F(1,512) = 78.377$, $p < .001$, while entering the cubic term did not produce significant changes, $\Delta R^2 = .001$, $F(1,511) = 0.598$, $p = .440$. Two-lines testing indicated a **U-shaped association between self-report interoceptive accuracy and attention** (Figure 2), with a negative slope for lower BPQ and a positive slope for high BPQ, Line 1: $b = -0.196$, $z = -3.914$, $p < .001$, Line 2: $b = 0.416$, $z = 8.785$, $p < .001$, breakpoint = 84.

As predicted, **IAS was negatively correlated with TAS**, $r = -.291$, $p < .001$, $CI_{99\%} = [-.395, -.180]$. Conversely, **there was no significant association between BPQ and TAS**, $r = -.030$, $p = .500$, $CI_{99\%} = [-.135, .098]$. Importantly, the correlation between IAS and TAS was significantly different from the correlation between BPQ and TAS, $Z = -4.305$, $p < .001$.

Our results suggest that **interoceptive accuracy and attention can be dissociated using self-report measures and may display a quadratic U-shaped association**, providing further evidence for the 2x2 model. Future studies should explore the non-linear relationship between interoceptive accuracy and attention using alternative questionnaires and performance-based measures.

