



Exploring the relationship between Mental Imagery and Interoception

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1. Introduction

Mental imagery (MI), or what is 'seen' internally in the mind's eye, is the internal process of representing concepts in their absence. While it is often visual, MI can also encompass other sensory modalities, such as auditive or tactile. **Interoception**, the perception of the body's internal state, plays a role in emotional processes. MI and emotional regulation are linked through mindfulness¹. As mindfulness involves focusing on internal signals, we hypothesize that interoception and MI are related, as they both rely on the ability to control attention to internal experience.

2. Objective

Exploring the connexion between interoception and MI through an online questionnaire

3. Participants

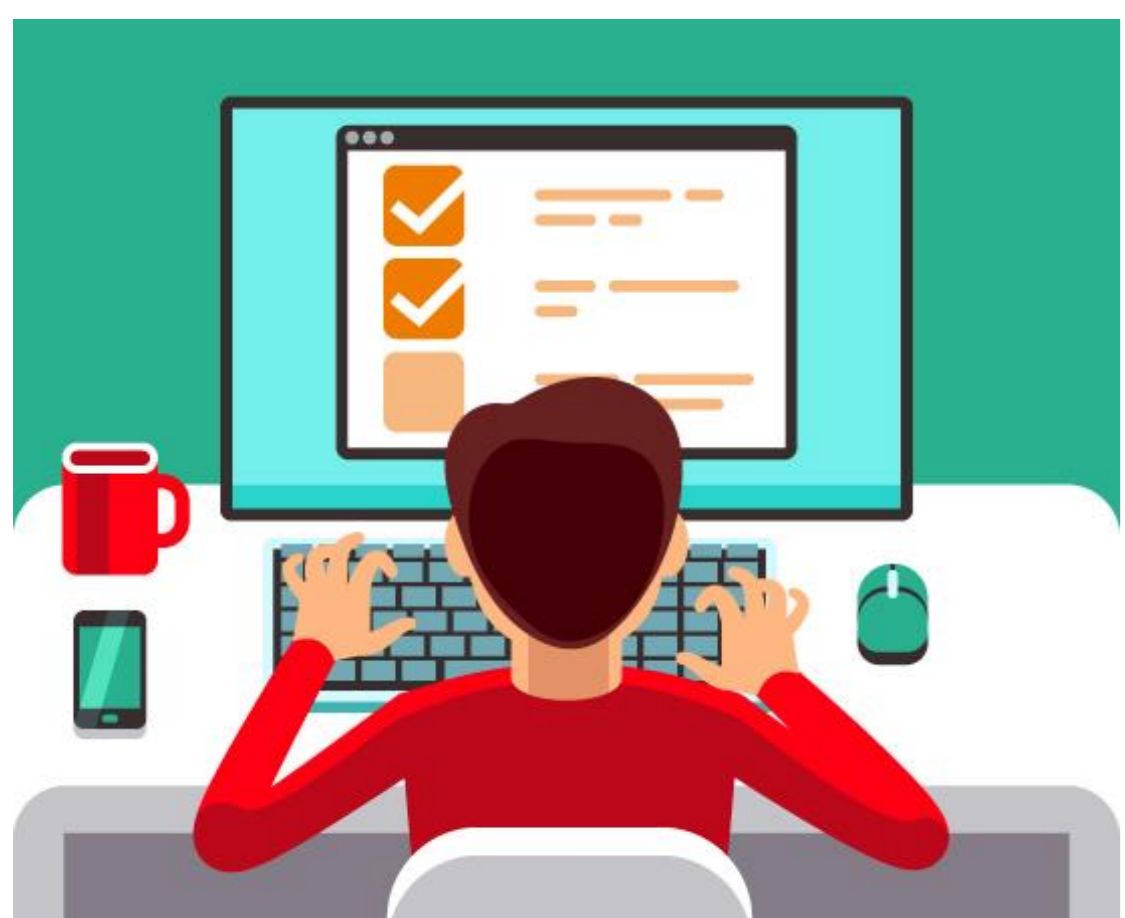
20 men and 113 women (age: 21 ± 4)
 53 had high-school degree, 37 bachelor's degree, 22 master's degree

4. Hypotheses

Greater attention to interoceptive signals is associated to higher MI abilities

5. Method

Online questionnaires:



Interoceptive sensibility (MAIA-2; Mehling et al., 2018)

8 subscales:

Noticing	Emotional Awareness
Not-Distracting	Self-Regulation
Not-Worrying	Body Listening
Attention Regulation	Trusting

Mental Imagery

Visual modality:

✓ Vividness of visual Imagery questionnaire (VVIQ; Marks, 1989)

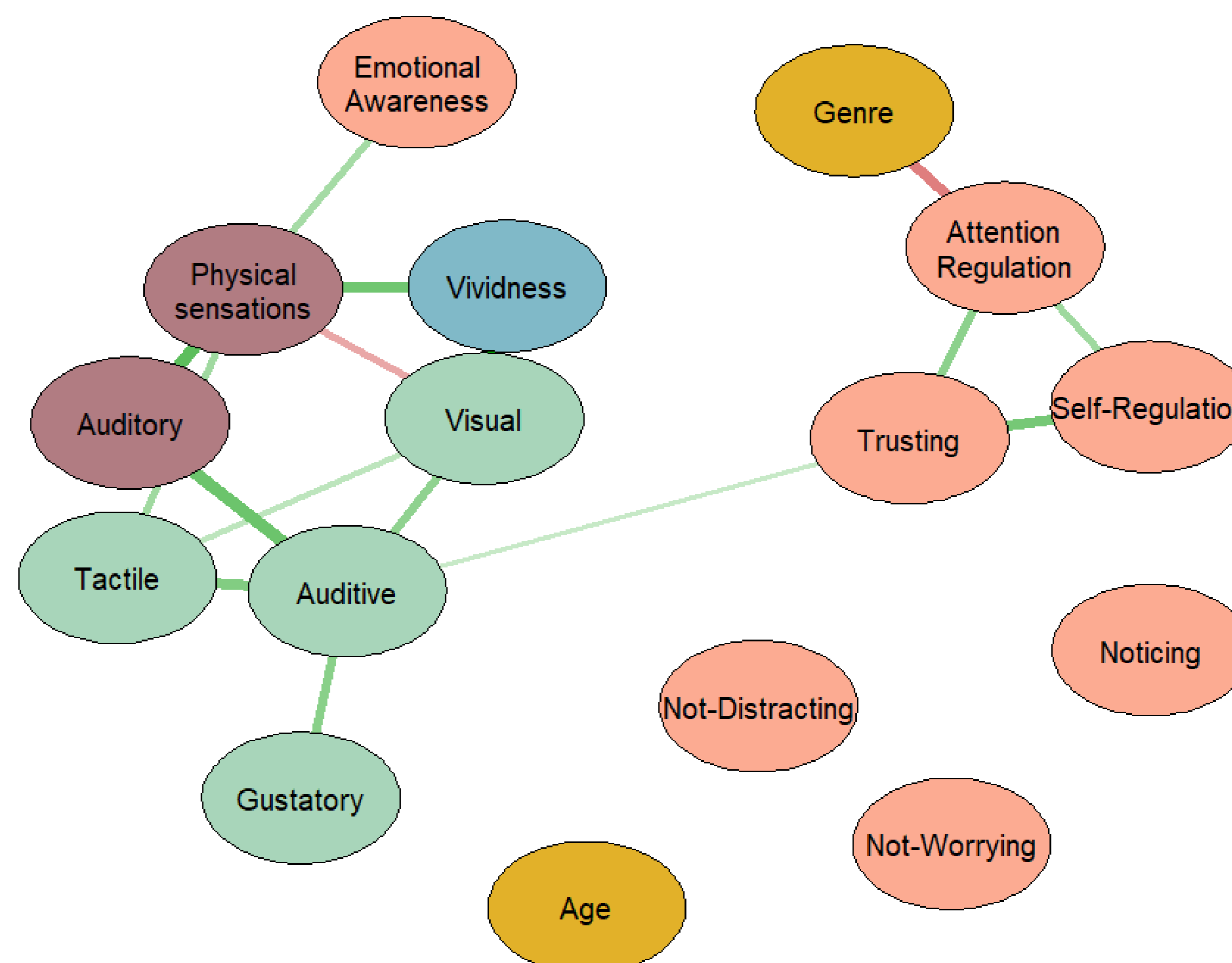
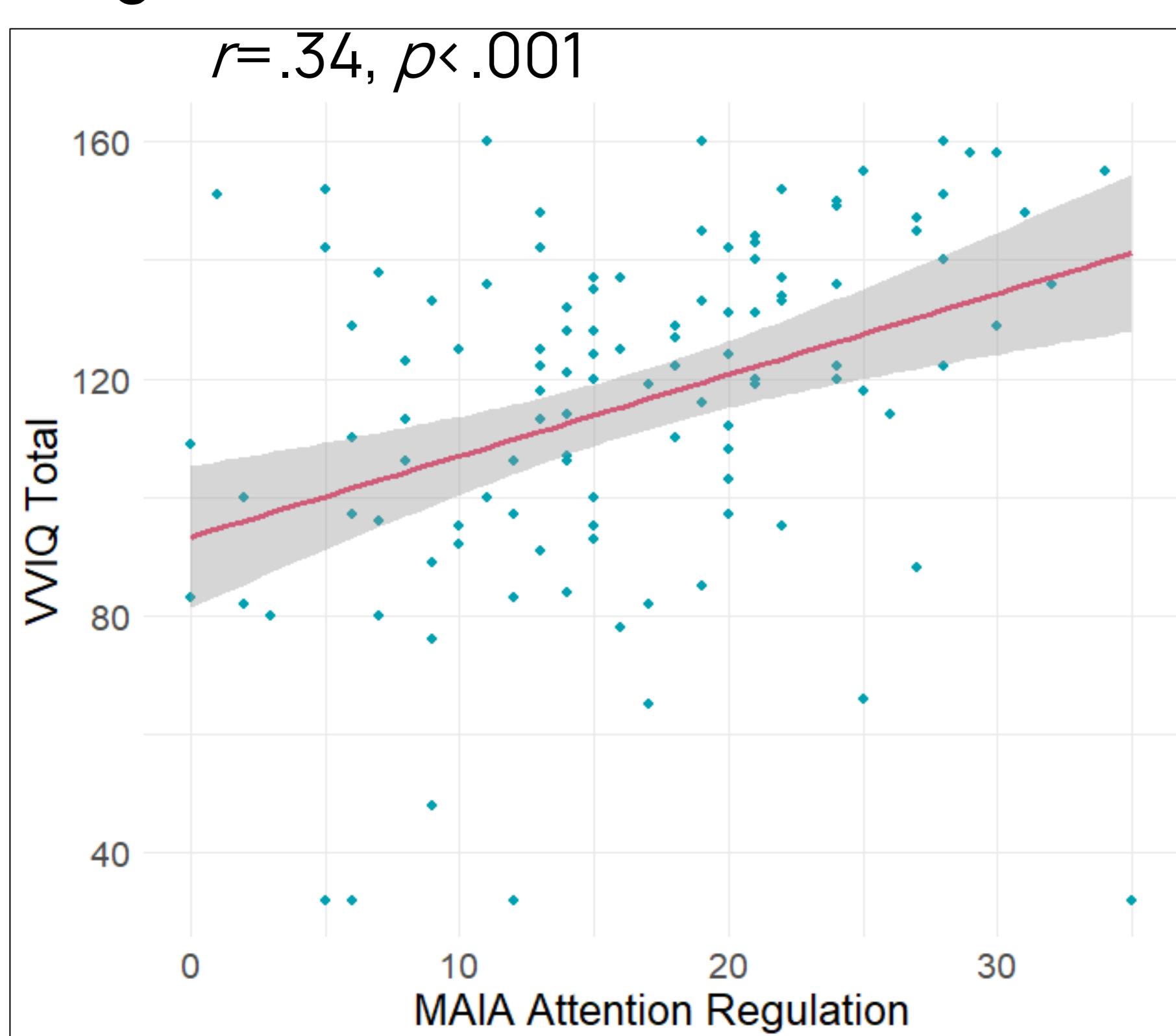
Multimodal:

✓ Sensory Imagery Questionnaire (PSI-Q; Andrade et al., 2014)

✓ Survey of Mental Imagery (Switras; Grebot, 2003)

6. Results

Correlation between MAIA Attention Regulation and VVIQ Total



Neural network showing connections between:

- Interoceptive **Emotional awareness** and **Physical sensations MI** ($r_{partial} = 0.22$)
- Interoceptive **Trusting** and **Auditive MI** ($r_{partial} = 0.14$)

● Demographic data
 ● MAIA Interoception
 ● PSIQ
 ● Switras
 ● VVIQ

7. Conclusions

These results suggest some connections between MI and interoception. Specifically, trusting bodily sensations and being aware of the connection between body sensations and emotional states may be associated with MI. These promising findings warrant further investigation to directly examine the link between interoception and MI. As both are associated with mindfulness, it would be interesting to explore whether increasing interoception through mindfulness practice could influence the MI. Additionally, given the limitations of using questionnaires, future studies should incorporate behavioural measures of interoceptive accuracy to deepen our understanding of the connection between interoceptive and MI.

¹Maxwell, R., Lynn, S. J., & Lilienfeld, S. (2017). Failures to Imagine: Mental Imagery in Psychopathy and Emotional Regulation Difficulties. *Imagination, Cognition and Personality*, 36(3), 270-300. Scopus. <https://doi.org/10.1177/0276236616679963>

²Anuar, N., Cumming, J., & Williams, S. (2017). Emotion Regulation Predicts Imagery Ability. *Imagination, Cognition and Personality*, 36(3), 254-269. <https://doi.org/10.1177/0276236616662200>

³Neacsa, A., McConnell, D. S., & Amon, M. J. (2022). The relationship between individual differences in mental imagery vividness and emotional distress. *Proceedings of the Annual Meeting of the Cognitive Science Society*, 44(44). <https://escholarship.org/uc/item/9ct087b4>