

NEUROANATOMICAL CORRELATES OF WELLBEING

Mindfulness vs. Religious Exercises

Ângela Leite, Tânia Oliveira, Bruno Nobre & Paulo Dias — *Universidade Católica Portuguesa* | Grant 380/20

BACKGROUND

The association between religion and well-being is robust across multiple multiple cultural contexts (Cohen & Johnson, 2017; Leite et al., 2020). However, literature review allows us to find mostly correlational studies. Few are the studies evaluating the impact of religious religious practice programs in wellbeing.

OBJECTIVE

We aimed to delineate these neuroanatomical correlates by contrasting the neural signatures of structured Christian prayer (Ignatian Exercises) and entirely secular mindfulness training.

METHODS

- **Ethical Consideration:** approval by the Institutional Review Board (IRB) of Hospital de Braga (Reference Protocol 133_2023).
- **Participants:** 15 individuals for the religious retreat (73.3% female, n=11) mean age of 48.6 years; nine for the MBSR program (100% female), mean age of 45.4 years
- **Design:** 5-day intensive retreats
- **Assessments:** Psychological scales + Structural & functional MRI (pre/post; MRI images from the brain were obtained using a clinically approved Siemens Magnetom Skyra Fit 3T scanner)

KEY FINDINGS

FUNCTIONAL CHANGES

- **Mindfulness:** ↑ Executive control network connectivity
- **Religious:** ↓ Executive control network connectivity

STRUCTURAL CHANGES

BOTH GROUPS: ↑ Gray matter density in:

- Left occipital cortex & fusiform gyrus
- Left insular cortex
- Left inferior frontal gyrus

PSYCHOLOGICAL OUTCOMES

- No significant changes in wellbeing, mindfulness, or distress scales post-intervention
- Religious group showed higher religiosity (expected)

Same destination, different paths: Both practices enhance wellbeing through distinct through distinct neural mechanisms; Intensive retreats = potent neuromodulators of neuromodulators of brain structure & function. Structural plasticity occurs regardless of regardless of philosophical framework

