Understanding the brain mechanisms of death-denial for fostering mindfulness-based existential resilience

ABSTRACT:

Background
Virtually all human wisdom traditions, East and West, from the Buddhist contemplative tradition to the Greek Stoics to existential philosophy recognize that the path to human post-conventional development passes through the experiential realization, and acceptance, of one's ultimate and inevitable cessation. We term this mental quality of facing up to one's death as existential resilience. We recently showed using a magnetoencephalogram (MEG) visual mismatch-response paradigm that prediction-based mechanisms mediate death-denial by shielding the self from existential threat. However, whether this protective mechanism which operates on early self-specific perceptual processes is amenable to change by mental training is unknown.

Aims
Building on this neurophysiological death-denial paradigm we aimed to: (1) gain understanding of the basic neural implementation, resilience factors, and downstream implications of death-denial, and (2) assess its regulation by mindfulness, with altered self-processing as the mechanism-of-action.

Method
Two cohorts consisting of meditation practitioners (n=38) and meditation-naïve participants (n=50) completed questionnaires and underwent the MEG death-denial task. In addition, the meditators voluntarily entered self-dissolution states in the lab and underwent phenomenological interviews for experientially mapping these states.

Results
Our results indicated that meditators' brain evidenced an acceptance rather than denial of death, in a manner indicating increased well-being. Furthermore, death acceptance was predicted by positive valence, but not by depth, of the lab-induced dissolution experiences. Meditation-naïve data further indicated that death denial defenses collapsed due to the prolonged real-life existential terror of Covid19, and in turn, impacted participants' concern towards the environment.

Conclusions
Based on the results we can conclude that the neural mechanisms underlying the human death denial system are plastic and change as an adaptive response to severe external circumstances involving acute and prolonged elevated levels of mortality salience, but also as a result mindfulness mind training. Additionally, we presented initial evidence that wholesome self-dissolution experiences may act a mechanisms-of-change. These results open up the field for longitudinal studies of the efficacy of targeted mindfulness-based existential interventions aiming at fostering existential resilience.

Keywords
Death-denial, Mindfulness meditation, Existential resilience, Self-dissolution, Magnetoencephalography

Published Work:

David, J., Bouso, J. C., Kohek, M., Ona, G., Tadmor, N., Arnon, T., Dor-Ziderman, Y., & Berkovich-Ohana, A. (2023). Ayahuasca-induced personal death experiences: prevalence, characteristics, and impact on attitudes toward death, life, and the environment. *Frontiers in Psychiatry, 14*, 1287961. doi: 10.3389/fpsyt.2023.1287961

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