Poster Title: Electrophysiological correlates of suicide risk in selective attention to mortality-related stimuli

Is suicide risk associated with attentional bias in processing of mortality-related words?

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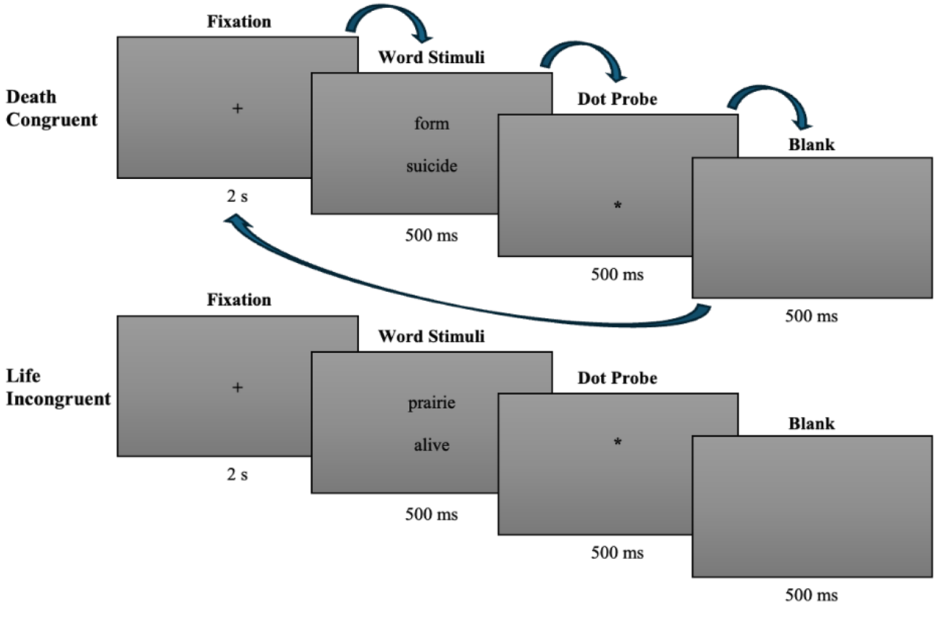
- Suicide risk is linked to attentional bias toward death-related stimuli, which can be measured using an objective, novel task, ***suicide Dot Probe Task***, combined with *MEG*.
- Task Design: 2(***death, life***) X 2(Congruent, Incongruent)



- Hypotheses: The suicide risk group would show ***faster reaction times and decreased source-level MEG power*** in response to ***death-related*** words, with no differences observed for life-related words.
- Explanatory analysis was conducted using the ***Dynamic Causal Modeling (DCM)*** in SPM12.

N=53	Suicide Risk (n=17)	Clinical Controls (n=17)	Healthy Volunteers (n=19)
Age	36.11 (11.36)	45.44 (15.86)	29.00 (6.47)
Biological Sex (Female)	13 (76.47%)	11 (68.75%)	9 (47.37%)
Ethnicity (White)	13 (76.47%)	12 (70.59%)	9 (47.37%)

What we did

- Group-level comparison of MEG power in different bandwidths (1-60 Hz).
- Selected brain regions were used to construct a biologically plausible DCM (ERP/CMC; 1-200ms; 4-29 Hz) model.
  - Visual cortex(**VC**), superior parietal lobule (**SPL**), entorhinal cortex (**EC**), and middle temporal gyrus (**MTG**)

What we found

- No reaction time difference.
- Suicide Risk group (compared to the others):
  - ***Decreased*** source-level MEG power for the death-related words: 46 ROIs.
  - ***DCM: Insufficient sensory processing and integration*** during death-related word processing.

Clinical implications

- Urgent requirement for ***objective, sensitive marker*** for suicide risk: Task-driven MEG with computational modeling
- The MTG may play critical role in signal processing and integration, particularly in the context of suicide.
- ***Impaired visual signal updating*** in processing of death-related words and ***weak suppression*** of MTG activity for life-related words may serve as markers of suicide risk.