



Scared to Death: Evidence of Cortisol Reactivity Following Mortality Salience



Gabriella D'Ambra, Claire Martinez, Emily Brown, Ana Padget, Maddie Weinstock, Robert Arrowood, M.S., & Cathy Cox, Ph.D.
Texas Christian University

Introduction

According to Terror Management Theory, humans hold the potential to experience terror due to the understanding of our eventual death. This terror results from the effort to reconcile death awareness and the evolutionary struggle to survive. While TMT research has accumulated many significant findings since its origination, its basic assumptions have recently been challenged suggesting that there is no direct evidence for "terror" as mortality salience (MS) effects are largely observed through self-reported questionnaires inferring terror. The current study addressed these concerns and demonstrated that following mortality salience, women experienced greater cortical arousal providing direct evidence of an anxiety response.



Hypothesis

Cortisol is the most potent glucocorticoid secreted by the hypothalamic-pituitary-adrenal (HPA) axis in response to a variety of physiological and psychosocial stressors. HPA axis is triggered when there is a threat to one's central goals i.e., survival or safety (Blascovich & Tomaka, 1996; Carver & Scheier, 1999; Dienstbier, 1989; Lazarus & Folkman, 1984).

Working from this assumption, we hypothesized that MS manipulation will activate participants' HPA axis and cause cortisol elevation from their baseline as thinking about one's death is directly connected to the central goal of survival.

Methods

- Twenty-six females ($M_{age} = 21$ years; range = 18-26 years) were randomly assigned to the MS or control conditions and asked to describe, in a paragraph or two, what they think will physically happen to them after their physical death (MS condition) or what will physically happen to them after watching TV (control condition).
- Saliva samples were collected in the beginning of each session (baseline) and then 25 min after the experimental manipulation began.
- In order to determine if mortality salience caused activation of participants' stress response system and cortisol elevation, an ANCOVA was conducted to control for baseline cortisol.

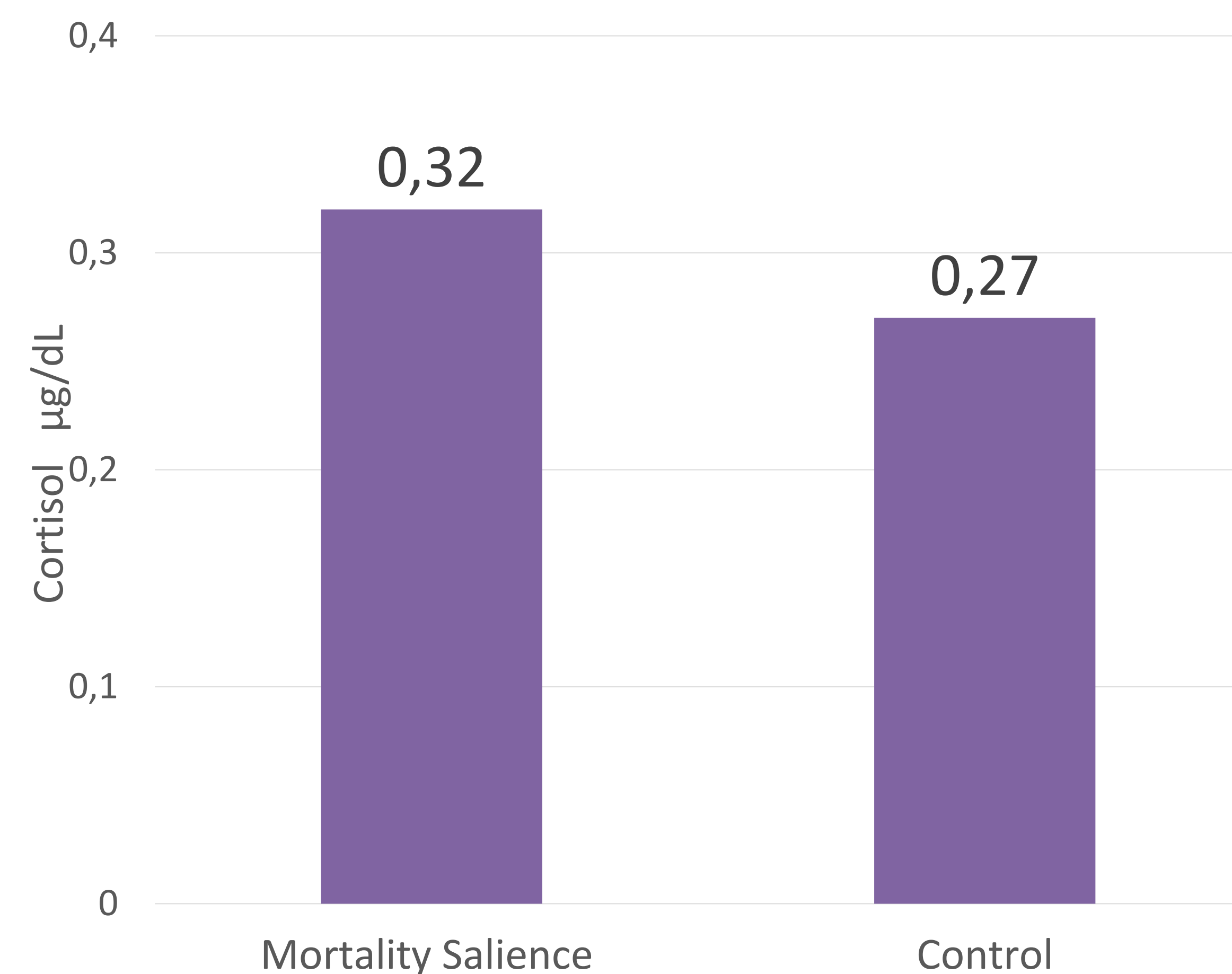


Figure 1: Mean post manipulation cortisol levels by condition

Results

- The analysis revealed a significant effect of both baseline cortisol, $F(1, 26) = 125.653, p < .001, \eta_p^2 = .854$, and the MS manipulation, $F(1, 26) = 6.558, p = .017, \eta_p^2 = .222$.
- Participants in the MS condition ($M = .32, SD = .013, 95\% C.I. = [.289, .315]$) responded to the experimental manipulation with a greater cortisol response than did participants in the control condition ($M = .27, SD = .012, 95\% C.I. = [.246, .294]$).

Conclusion

- While mortality concerns may be an unconscious phenomenon, these concerns are processed through brain-based anxiety systems when activated by thinking about one's own death and should be evident in measurable physiological responses.
- In support of this postulate, females in our study exhibited higher level of cortisol response following MS than their counterparts in control condition.
- Observed cortisol response following MS in our study indicates that reminder of death is "terrorizing" enough to activate the second component of the stress response system - HPA axis - in addition to immediate fight-or-flight response in females.
- Future research should consider replicating this results with a representative sample of both male and female participants, as our sample comprised only of women, making it difficult to generalize this result to men.

