

Sensory Psychophysiology

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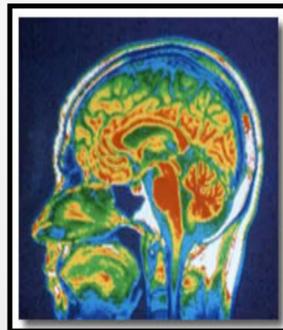


BACKGROUND

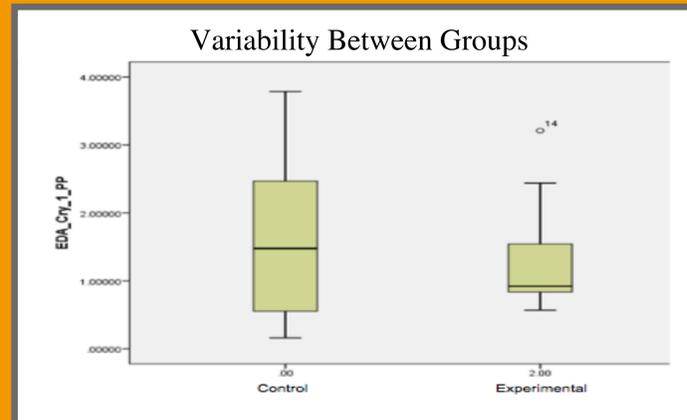
- Sensory processing** is the nervous system's ability to process sensory information in the environment and create a behavioral response to sensory stimuli.
- Sensory over-responsivity** is characterized by responses to various stimuli that is greater than what would be expected for a typical response.
- Studying **typical adults**, without clinical diagnoses, is imperative as there is limited evidence and they are challenged daily to cope with over-sensitivities (Kinnealey, et al., 1995).
- Empirical and **more objective measures** (EDR, HR, BP) are needed to quantify physiological responses to sensations (McIntosh, Miller, Shyu, & Hagerman, 1999).

PURPOSE STATEMENT

This study examined the differences in physiological responses in individuals who self-reported high levels of sensory sensitivity and typical levels of sensory sensitivity.

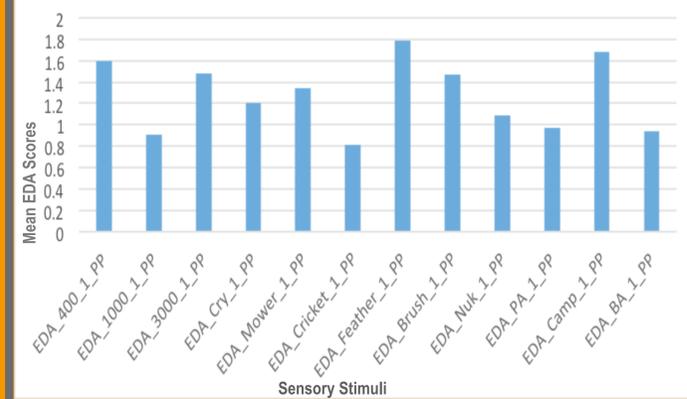


RESULTS



As seen in the box plot above, high variability of EDR was observed across all stimuli within the control group. No significant difference in responses between groups was observed for any of the stimuli.

Mean EDA Peak to Peak Scores



The graph above represents EDR responses to sensations for people who qualified as "more than most" sensitive on the sensory profile. More intense sensations, such as the mower, feather, and camphor smell provoked the higher responses.

KEY FINDINGS

- Large variability between control and experimental groups affected the outcomes of the data. There was no significant group differences between the two groups for electrodermal reactivity (EDR).
- There are differential, meaningful patterns observed in how people with sensory sensitivity are responding to sensations.
- When analyzing the experimental group alone, the mean responses were highest for the most intense stimuli.
- The experimental group displayed signs of suppression resulting in low EDR. Ultimately, this demonstrated no significant correlation between self-reported sensitivity and physiological response.



IMPLICATIONS

- Our research furthers knowledge and understanding of sensory over-responsivity in typical adult populations.
- High variability in control group's electrodermal responses to sensation identifies a need to utilize physical, observational and self-report assessments to ensure accuracy in sensory measurements and treatment.
- Therapists must be aware of sensitive individuals' ability to suppress reactions to stimuli, despite possibly being uncomfortable and agitated.

ACKNOWLEDGEMENTS

We would like to acknowledge our awesome capstone advisor, Julia Wilbarger, Ph.D., OTR/L, Associate Professor and Department Chair at Dominican University of California, for her unwavering guidance and support. We would like to send out a huge thank you to the participants of our study, as well as Joanne Figone, who acted as the 2nd reviewer for our paper. Lastly, we'd like to thank CFOT for making our study possible with their generous financial contribution.

RESEARCH DESIGN & METHODS

Design: Quasi experimental design

Participants: Experimental Group: 10 adults, ages 18-65
Control Group: 6 adults, ages 18-65

Data Collection:

-Measures: Adolescent & Adult Sensory Profile; Electrodermal response (EDR)

-Procedures: Participants were presented with auditory pure tones and real sounds, tactile and olfactory stimuli. EDR was recorded via BioPAC MP500 during stimulus presentation.

Data Analysis: The experimental and control groups were compared for magnitude of EDR during each stimulus, using an independent sample t-test. A significance level of $p = .05$ was set.