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Physiological Responses of Adults with Sensory Over-Responsiveness

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Introduction

- Individuals with SOR, the most common sensory modulation disorder, describe daily life experiences as irritating, overwhelming, disorganizing and distracting (Kinnealey, Koenig & Smith, 2011)
- Stimulation from the environment is interpreted through our body’s senses and causes automatic, unconscious changes in our physiological responses

Purpose

- To compare typically functioning adults who self-report as low or high in sensory over responsivity (SOR)
- To validate the sensory experiences of these adults and assist practitioners in properly addressing them

Research Design

- n=17* → Experimental Group (high SOR) = 8, Control Group (low SOR) = 9
- Inclusion: Typical, English speaking adults 18-64 years old and AASP scores
- Exclusion: Cognitive or mental diagnoses and medications that influence the autonomic nervous system

* Researchers originally recruited n = 22, however, five participants were removed due to not meeting re-qualification criteria

Measures and Methods

- Group Determination: Adolescent/Adult Sensory Processing (AASP) and Sensory Response Questionnaire (SRQ) scores
- Outcome: Electrical Dermal Response (EDR) to 12 different sensory stimuli across three different modalities

Sensory Challenge Protocol

- Auditory
  - Crickets
  - Lawnmower
  - Baby crying
  - Pure Tones
- Tactile
  - Cotton Puff
  - Nuk Brush
  - Feather
- Olfactory
  - Camphor
  - Orange
  - Butyric Acid

Results

- Electrophysiological Responses

Conclusion

- Groups differed significantly on the AASP and SRQ at P < 0.001
- High SOR group had a larger EDR; however, this difference was not significant
- EDR to the lawn mower trended towards significant group differences, EDR to 3000 Hz and Nuk Brush had moderate effect sizes
- There are strong correlations for inter-stimuli EDR, the way an individual responds to one or a few stimuli is predictive of how that individual will respond to other stimuli

Implications for Practice

- The AASP & SRQ can be used in conjunction to determine a client’s SOR status
- EDR can be a useful tool to justify the experiences of these adults for other practitioners in future studies
- The way an individual responds to one stimulus can be generalized to how they will respond to all stimuli
- Occupational therapists are best suited to work with individuals with high SOR through task analysis and education of coping strategies

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