Postural Orthostatic Tachycardia Syndrome (POTS) and Occupational Therapy

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Objectives:
1. To form a comprehensive, foundational understanding of sensory functioning, specifically sensitivity to sensory stimulation, in adults with POTS
2. Identify if there is a relationship between individual’s sensory functioning and severity of autonomic symptoms

Methods:
- 756 adults diagnosed with POTS completed an online survey
- Measured autonomic symptom severity using the composite autonomic symptom score 31 (COMPASS-31)
- Measured sensory functioning using the sensory perception quotient (SPQ)
- Performed Spearman’s correlations to analyze the relationship between the measures.

Results:
- 2.6% had autism spectrum disorder, all of whom were female
- Sensory hypersensitivities were identified in all senses
- Touch was the most hypersensitive sense and hearing was the least sensitive
- All correlations were weak, however, several trends emerged from the data

Introduction - What is POTS?
- A systemic, chronic health condition
- Diagnostic criteria: (1) an increase of heart rate > 30 BPM within the first ten minutes of standing, (2) symptoms of orthostatic intolerance, (3) absence of orthostatic hypotension
- An estimated 500,000 – 5 million Americans and 1 in every 100 teenagers have POTS
- The quality of life is comparable to that of individuals with COPD and CHF.

Barriers to Functioning
- Symptom Related Barriers:
  - The number, frequency, and severity of orthostatic and non-orthostatic symptoms contribute to the overall disease burden and subsequent diminished quality of life
  - Orthostatic symptoms include dizziness or lightheadedness, weakness, dyspnea, chest tightness, palpitations, and tremulousness in the upright position
  - Non-orthostatic symptoms include headaches, fatigue, cognitive impairment, sleep disturbances, exercise intolerance, and chronic pain.
- Indirect Barriers:
  - Lack of awareness about POTS and the specialized structure of the healthcare system have led to high diagnostic delays

The Role of Occupational Therapy in the Management of POTS
- Modify activities to be done in specific sensory modality
- Sleep hygiene
- Modify activities to be done in specific sensory modality
- Moderate stress levels
- Energy conservation
- Occupational Therapy Interventions

Acknowledgements
I would like to thank Dr. Gibbs for her oversight and direction throughout this process and Jenny Welford for her mentorship on POTS. I would also like to thank Lauren Stiles and Dysautonomia International for assistance with recruitment for the research portion of this project and Dr. Dietrich for her assistance with data analysis.

Outcomes
Sensory Functioning in POTS and the Relationship with Autonomic Symptom Burden

<table>
<thead>
<tr>
<th>Sensory Function</th>
<th>Touch</th>
<th>Touch-Pressure</th>
<th>Touch-Temperature</th>
<th>Touch-Pain</th>
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Note: Reported as percentage of maximal score for comparison due to different measured totals for varying sensory subcategories. Percentage comparability; median score divided by maximal sense or subcategory score.

Spearman ρ Correlations Between SPQ and COMPASS-31 Items

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Mission of Belmont University School of Occupational Therapy

The School of Occupational Therapy provides comprehensive graduate education within a Christian learning environment to enable students from diverse backgrounds to positively impact the community at large and enhance the human condition through appreciation of diversity, problem-solving, and utility of meaningful and purposeful occupations.

Identified Needs of the POTS Population

- Lack of literature and awareness of the condition within the occupational therapy community
- Currently underserved by the field of occupational therapy
- Gap in existing literature relating to the occupational therapy scope of practice pertaining to sensory functioning

Goals of the EC

Scholarship:
- Compile and analyze current literature on POTS and related occupational therapy concepts
- Design and implement a research study to assess sensory processing in individuals with POTS and the relationship with autonomic symptom burden
- Synthesize results of the research study, current literature on POTS and relevant OT literature

Clinical Excellence:
- Develop a written review of barriers to functioning in individuals with POTS and the role or occupational therapy in the management of POTS.

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