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## Sensory Processing Assessment in Alzheimer's Disease and Related Dementias: A Research Capstone Experience

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# Sensory Processing Assessment in Alzheimer's Disease and Related Dementias: A Research Capstone Experience

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## Introduction

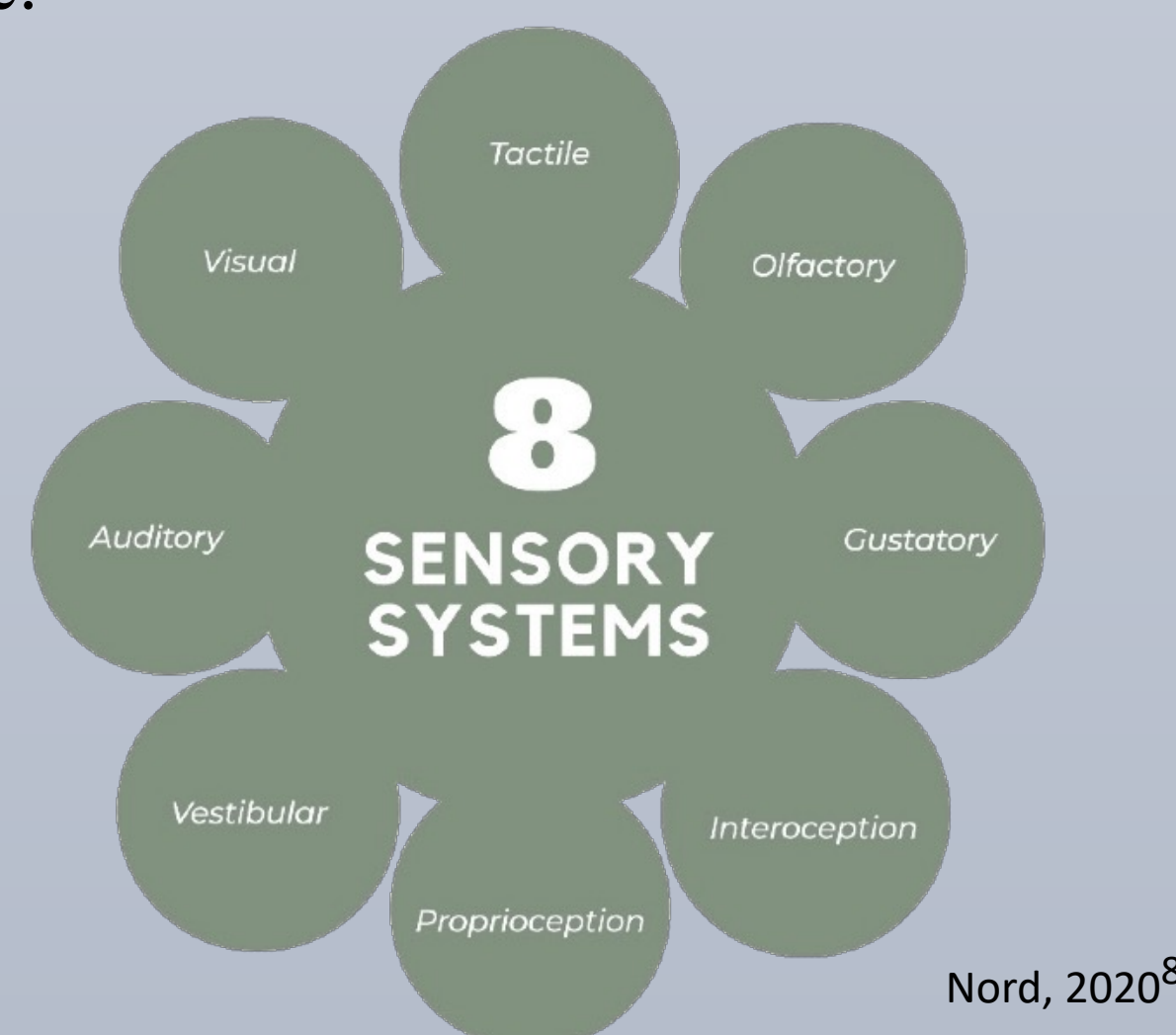
- The overarching goal of this capstone project was to gain experience, skills, and insight into clinical research involving occupational therapy (OT).
- This was accomplished by completing a systematic review that evaluated the literature on sensory processing assessment in the Alzheimer's Disease and related dementia (ADRD) population to support clinical research. Then, this review was submitted for publication and presented at the Alzheimer's Association International Conference.
- A second main component was having a research assistant role in an active clinical trial for a newly developed intervention by Dr. Elizabeth Rhodus, which supported filling the gap identified in the systematic review. This allowed this project to capture multiple components of the research process.

## Capstone Site Description

- University of Kentucky: Healthy Kentucky Research Building in Lexington, KY.
- Remote experience with weekly meetings via Zoom
- One week on-site visit

## Summary of Needs Assessment

- Nearly 90% of individuals with Alzheimer's disease and related dementias (ADRD) experience behavioral and psychiatric symptoms of dementia (BPSD)<sup>1</sup>.
- Managing BPSD is crucial to enhancing quality of life for patients and decreasing caregiver burden<sup>2</sup>.
- Currently no FDA-approved drugs to treat BPSD<sup>3</sup>.
- Non-pharmaceutical sensory interventions are increasingly used, but reviews are mixed<sup>4,5,6</sup>.
- Sensory processing and integration reflect an individual's neurophysiologic abilities to detect, modulate, and integrate sensory stimulation from the environment and initiate appropriate responses and behavior<sup>7</sup>.
- Sensory acuity may be measured in some cases, but sensory processing capacity is rarely measured.
- Occupational therapy (OT) is well equipped to fill this void; however, OT research is not as prominent as it could be.



## Literature Review Summary

A systematic review was conducted following PRISMA 2020 guidelines to examine published literature and assess its quality regarding sensory processing assessment in ADRD<sup>9</sup>.

- This systematic search identified 14,928 articles. Zero studies assessed sensory processing capacity prior to providing sensory-based interventions in persons with ADRD, resulting in an empty review.
- 21 articles underwent full review, and two were identified for further consultation with the research team: Cohen-Mansfield et al. and Leroi et al.<sup>10, 11</sup>. The team concluded that these two did not meet the inclusion criteria. Both studies evaluated the participant's vision and/or hearing abilities prior to intervention but did not assess sensory processing capacity.
- This review identified a void of sensory processing assessments and a vast number of articles pertaining to sensory-based interventions in relation to ADRD.
- Systematic reviews with no findings are critical as they highlight important gaps and have the potential to illustrate the possible harms of an intervention<sup>12</sup>.
- Without sensory processing assessment, skilled and individualized interventions for BPSD lack direction grounded in neurobiological underpinnings of the individual's capacity and needs. A thorough assessment is warranted to protect the individual, as well as gain the most benefit from intervention.

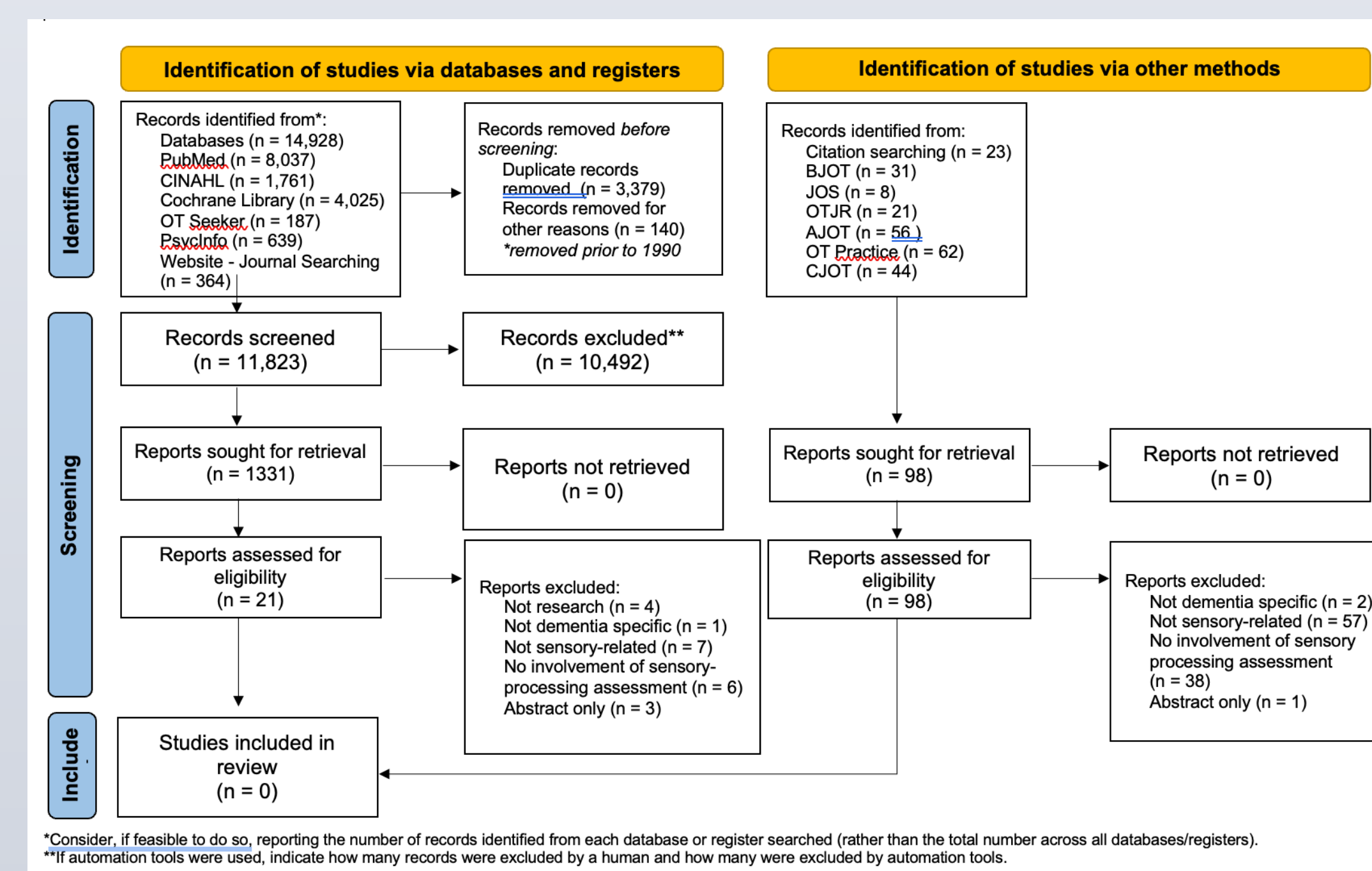
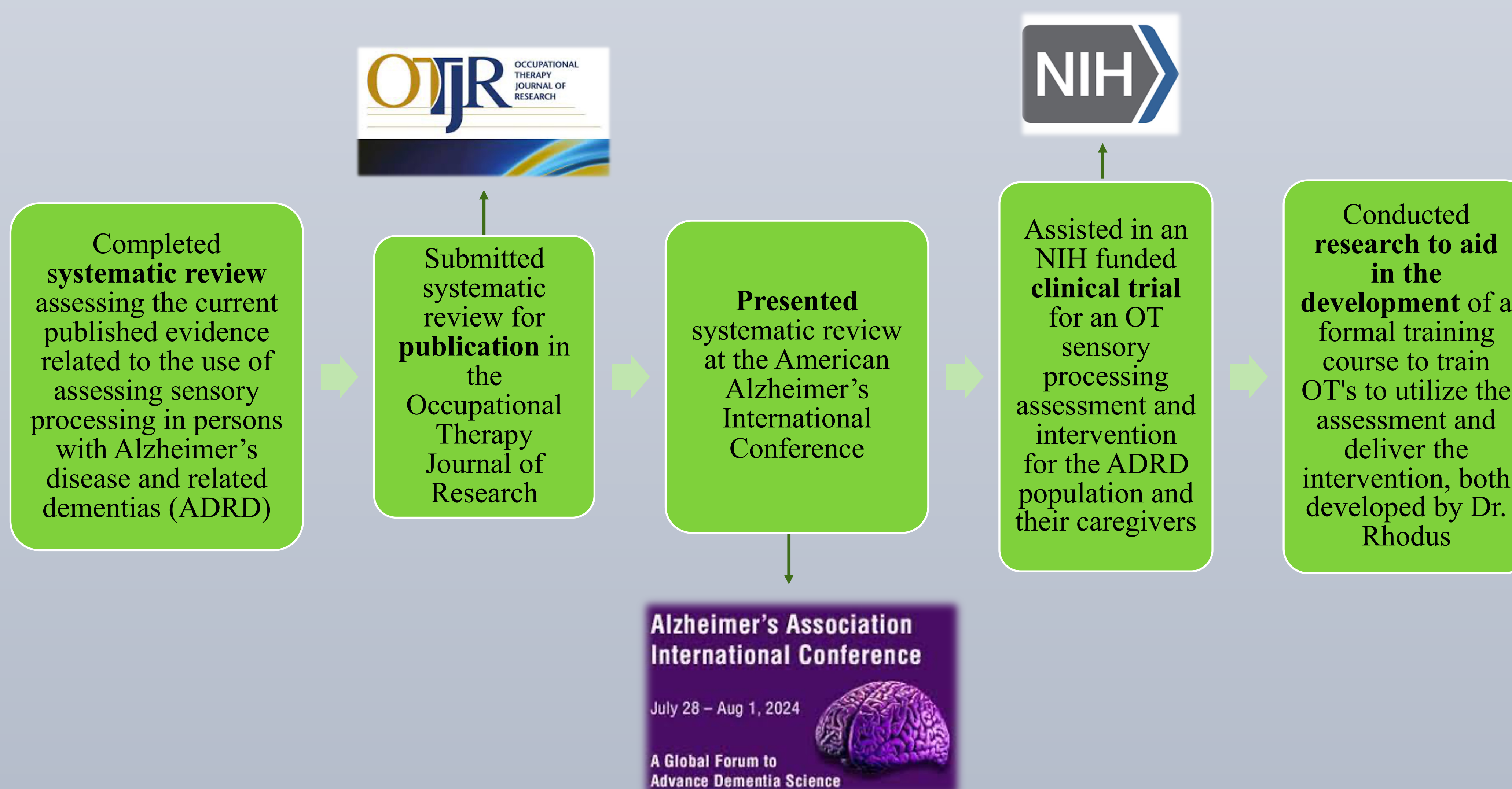


Figure 1. A PRISMA flow chart was used to summarize the number of papers included/excluded at each stage of the review.

## Capstone Project Description & Outcomes



## Capstone Goals Achieved

- Goal 1:** Assessed the evidence for sensory processing capacity assessments for people living with ADRD through a formal systematic review of the literature that is pending publication.
- Goal 2:** Enhanced my understanding of the occupational therapist's role in research and development.
- Goal 3:** Increased my competence in clinical research skills.



## Implications for OT Practice

- Occupational therapy has a unique role in addressing this gap in ADRD non-pharmacological care options due to the wealth of experience and evidence in pediatric assessment and intervention<sup>13</sup>.
- An assessment that identifies specific sensory processing dysfunction in the ADRD population is needed. This would raise the standard of best practices for managing BPSD and caregiver burden.
- There is a need for an increase in OT clinical research to enhance OT practice and add to the evidence in the literature.

"In order to gain the recognition we deserve, we must give our patients, our referral sources, and the public answers concerning the impact of activity on human performance. Rather than relying on the principles of other disciplines to guide the delivery of our services, we must become responsible as a profession and as individuals for developing our own principles"  
-Baum, 1984

## REFERENCES & ACKNOWLEDGMENTS

References Available Upon Request

I would like to thank Dr. D'Amico for her role in introducing Dr. Rhodus to me and Dr. Rhodus for sharing her wisdom, attentiveness, and encouragement; which set me up for success in this capstone. I also want to thank Dr.Kane for her continuous support throughout the capstone process.