

INTRODUCTION

- Primary Progressive Apraxia of Speech (PPAOS) is an isolated, motor speech disorder where apraxia of speech is the sole or predominant deficit, typically progressing into a degenerative disease (Duffy & Josephs, 2012)
- PPAOS prevalence has never officially been established, but it is estimated to be 4.4 for every 100,000 people. Typical age of onset averages 65-years-old (Botha & Josephs, 2019)
- PPAOS is commonly mistaken for primary progressive aphasia or overshadowed by a diagnosis of dysarthria (Josephs et al., 2012)
- The objective of this review was to find the speech and language assessments used to diagnose PPAOS in the research literature
- We conducted a systematic review to capture the current PPAOS diagnostic measures



METHODS

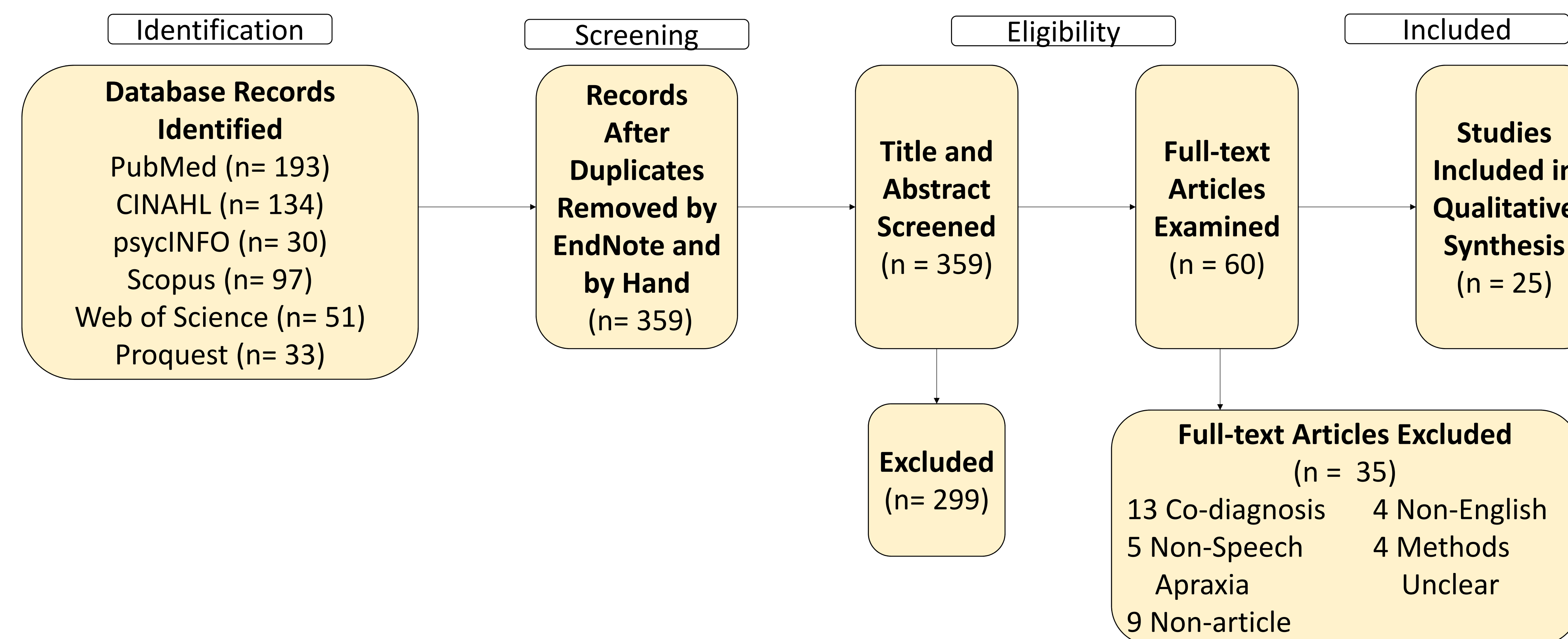
- We searched 6 databases: PubMed, CINAHL, psycINFO, Scopus, Web of Science, Proquest Dissertation & Theses
- Database searches were completed between June 11, 2019 and June 12, 2019
- Two reviewers independently sorted titles, abstracts, and full-texts for all 6 databases

Inclusion Criteria	Exclusion Criteria
English	Non-English
Human Subjects	Non-human Subjects
Publication and Grey literature	Review articles
Individuals with PPAOS	Non-Speech Apraxia

SELECTION PROCESS

Systematic Record of Article Selection

Taken from Moher et al., 2009



KEY FINDINGS

- Of the 25 articles, 8 articles did not utilize overlapping participants and are described below
- Tests included in the table were those used by 2 or more studies
- The participants scores are recorded by mean and standard deviation when provided

	Total Subjects=156	Bergeron, 2015 (n=1)	Botha, 2014 (n=34)	Botha, 2015 (n=40)	Brodthmann, 2016 (n=1)	Duffy, 2015 (n=2)	Josephs, 2012 (n=34)	Singh, 2015 (n=41)	Takakura, 2019 (n=3)
Language	Boston Naming Test (/15)			13.40 ± 1.8	53*/(60)	13.5	14.5(12–15)		
	Mini-Mental Status Examination (/30)						29.5 (27–30)	28.3 ± 2.1	
	Token Test (/22)			18.68 ± 3.3		21	20.5(16–22)		
	Verbal Fluency Letter Action			20.87 ± 10.4	WNL		26(8–42)		
	WAB Aphasia Quotient (/100)		96.1 ± 4.8	91.68 ± 10.8		94.95	96.9(95.6–100)		
	Spontaneous Speech (/20)			18.00 ± 2.7			20(19–20)		
	Information Content (/10)			9.60 ± 0.7		10			
	Fluency (/10)			8.40 ± 2.2		9.5			
	Verbal Comprehension (/10)			9.81 ± 0.3		9.7	9.95(9.6–10)		59*/(60)
	Repetition (/10)			8.88 ± 1.9		9.5	9.4(9.2–10)		
Speech	Naming (/10)			9.16 ± 1.0		9.6	9.6(9.2–10)		58.6*/(60)
	Writing Output (/34)			29.41 ± 7.0		33.75	34(23.5–34)		
	Apraxia of Speech Rating Scale (/64)		15.6 ± 5	21.7 ± 10.0		19.5	17(9–33)		
	Apraxia of Speech Severity (/4)			1.99 ± 1.0		2.5	1(1–2)		
	Distortions	yes			yes	yes			
	Dysarthria Severity (/4)			.63 ± 1.0		0	0(0–1)		0
Other	Dysprosody	yes			yes	yes			
	Speech Articulation Error (%)	yes			yes	30%			
	Speech Rate	slow			decreased	slow			
	Non-Verbal Oral Apraxia (/32)		24.62 ± 8.2* (/62)	22.65 ± 9.6		19	30.5(9–32)		

WAB= Western Aphasia Battery; WNL= Within Normal Limits; *= out of a different total; **bold print**= Median and Interquartile Range

CONCLUSIONS



- By conducting a systematic review, we summarized the testing measures used to diagnose PPAOS in the current research literature
- The Apraxia of Speech Rating Scale, Boston Naming Test, Dysarthria severity, Non-Verbal Oral Apraxia, and the Western Aphasia Battery are the most frequently used examinations to diagnose PPAOS
 - Additional assessments only used by one of the 8 studies included the Western Aphasia Battery supplementary tests, category switching and clustering, and agrammatic aphasia severity
- During diagnostic assessment, it is important to provide a range of both speech and language measures to rule out other diagnoses
 - Language measures rule out aphasia diagnoses, recognizing that language representation is stable while motor speech is the primary deficit
- Our findings may guide clinicians to accurately diagnose PPAOS in the future

SELECTED LITERATURE CITED

- Botha, H. A., & Josephs, K. (2019). Primary progressive aphasia and apraxia of speech. *CONTINUUM: Lifelong Learning in Neurology*, 25(1), 101-127.
- Duffy, J. R., & Josephs, K. A. (2012). The diagnosis and understanding of apraxia of speech: Why including neurodegenerative etiologies may be important. (Report). *Journal of Speech, Language, and Hearing Research*, 55(5), S1518-S1522.
- Josephs, K., Duffy, J., Strand, E., Machulda, M., Senjem, M., Master, A., . . . Whitwell, J. (2012). Characterizing a neurodegenerative syndrome: Primary progressive apraxia of speech. *Brain*, 135(5), 1522-1536.

DISCLOSURES

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