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The Efficacy of Telepractice on Expressive Language Outcomes for Adults with Aphasia: A Systematic Review

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BACKGROUND

Aphasia:

- Acquired neuropathy
- Caused by stroke, head injury, brain tumors, toxemia, infections or abscesses
- Disrupts an individual's ability to speak, comprehend and/or produce language
- 2,000,000+ people with aphasia currently live in the United States¹

Telepractice:

- "The application of telecommunications technology to the delivery of speech-language pathology and audiology professional services at a distance"²
 - *Teletherapy* involves live access to a trained clinician that occurs in real-time
 - *Telerehabilitation* includes services and activities that do not require the direct involvement of the SLP

Expressive Language

- The use of oral language to convey messages to communicative partners

PURPOSE

To determine if telepractice services produce positive expressive language outcomes and whether those outcomes are comparative to live, face-to-face therapy.

METHODS

Sources: 4 indexed databases (Ovid MEDLINE, CINAHL, PubMed and PsychINFO)

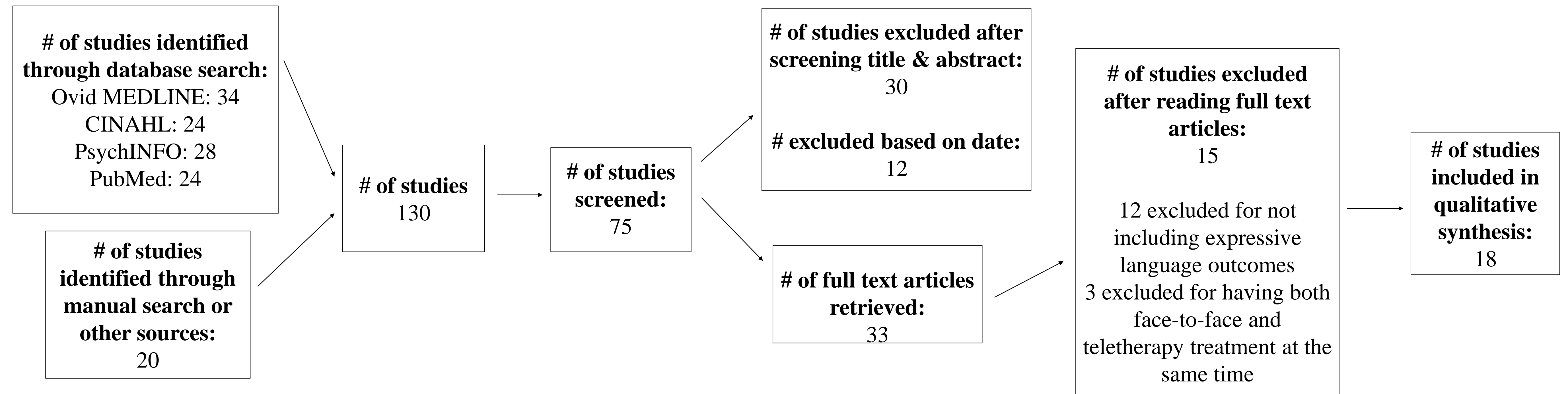
	Inclusionary	Exclusionary
POPULATION	Adult (18+) Formal diagnosis of aphasia	Individuals less than 18 years of age Individuals with concomitant language impairment not associated with aphasia
INTERVENTION	Telehealth service delivery Treatment	Combination telehealth and face-to-face service delivery Assessment
COMPARISON	Control group comparison Therapy using face-to-face service delivery model	Combination telehealth and face-to-face service delivery
OUTCOME	Outcomes related to expressive language	Outcomes focused on reading, comprehension, written output, and social/emotional changes
STUDY TYPE	Published in the last 10 years Published in peer-reviewed journal Written in English	Not published in the last 10 days Non-peer reviewed published Non-English publications

Search Terms: Broca's Aphasia, Primary Progressive Aphasia, Dysphasia, Telerehabilitation, Telepractice, Telemedicine, Teletherapy, E-Health, Videoconferencing

Data Extraction: Articles were read by 3 independent appraisers who then extracted data and input it into a study summary table

Quality Assessment: Articles were independently assessed by 3 appraisers using a standardized form

RESULTS



Outcome Measure	Studies that Reached Statistical Significance
CAT	Pitt, Theodoros, Hill, & Russell (2017)
NSM	Agostini et al. (2014) ^{*3}
	Macoir, Sauvageau, Boissy, Tousignant, & Tousignant (2017)
	Meyer, Getz, Brennan, Hu, & Friedman (2016) ^{*4}
	Palmer et al. (2012)
	Woolf et al. (2016) ^{*5}
WAB	Archibald, Orange & Jamieson (2009)
	Cherney et al. (2011) ^{*6}
	Choi, Park & Paik (2016)
	Fridler et al. (2012) ^{*7}
	Steele, Baird, McCall & Haynes (2015)

Outcome Measure	Studies Resulting in Positive Outcomes Without Reaching Statistical Significance
CAT	Pitt, Theodoros, Hill, Rodriguez, & Russell (2017)
NSM	Dechene et al. (2011)
	Ruiter, Rietveld, Hoskam & Van Beers (2016)
WAB	Cherney, L.R., (2010)
	Furnas, & Edmonds (2014)
	Rogalski et al. (2016)

WAB = Western Aphasia Battery, **CAT** = Comprehensive Aphasia Test, **NSM** = Non-standardized measures

* 5 of the 18 studies contained control groups that enabled direct comparison of telepractice service delivery and face-to-face service delivery.

These studies concluded that the differences in outcomes between the two groups were not statistically significant, indicating that telepractice service delivery may produce similar expressive language outcomes when compared to face-to-face service delivery.

One study noted that, upon comparison, telepractice produced greater positive outcomes than the control.

CONCLUSION

- Studies showed that a telepractice method of service delivery yielded positive expressive language outcomes
- The majority of studies reached the level of statistical significance (11 total), with the remainder producing positive but not statistically significant results (7 total)
- Five studies indicate that similar language based outcomes were received through telepractice when compared to traditional face-to-face service delivery

LIMITATIONS

- Small sample sizes
- Variability in courses of intervention and assessments used
- Concerns with patient confidentiality and privacy
- Lack of information regarding billable services
- Standardized, clinical training of individuals providing treatment
- Unreliable technology and/or variety of platforms that can be used for therapy

RECOMMENDATIONS

- Further research to address the feasibility and possible financial benefits of funding telepractice
- Inclusion of targeted, high powered studies which control for patient characteristics
- Studies directly comparing telepractice outcomes to those received through face-to-face intervention

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