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The search was limited to articles written in English.

<u>Selection Criteria</u>
Studies selected for inclusion in this critical review paper were required to investigate the effectiveness of any type of speech-language pathology naming intervention with individuals diagnosed with PPA. For the purposes of this paper SD was included as a variant of PPA.

<u>Data Collection</u>
Results of the above search and inclusion criteria revealed the following type of articles: single subject multiple baseline pre-posttest design (6), single subject time series design (1) and single subject 'n of 1' design (2). Bier et al. (2009), Henry et al. (2008), and Marcotte & Ansaldo (2010) performed semantically-based interventions. Jokel et al. (2009) and Jokel et al. (2010) performed interventions using MossTalk Words！. Graham, Patterson, Pratt, & Hodges (1999) included three different experiments with the same patient. Newhart et al. (2009) used a cueing hierarchy treatment approach.

Results

<u>Single Subject Designs</u>
Although single subject designs are not ideal for some types of research, they can be seen as appropriate designs for studying PPA. PPA is much more rare than post-stroke aphasia. For rare disorders single subject designs are often warranted, as it is difficult to recruit groups of individuals with a rare disorder. Also these designs allow one to examine change and variability within an individual while maintaining good experimental control (Jokel et al., 2009). However, it is important to note some of the disadvantages associated with single-subject designs including: limited generalization, the possibility that all outcomes may not be observed, and the fact that smaller effects may be more difficult to detect. Also, because of the nature of these designs, blinding is often not possible.

<u>Semantically based interventions</u>

Bier et al. (2009)

These authors studied the effects of formal semantic therapy and the spaced retrieval (SR) method on a subject (TBo) with SD. TBo's diagnosis was based on widely accepted neuroimaging and behavioural tests of the brain and language. TBo was exposed to an alternating treatment design including multiple baselines. Intervention consisted of an alteration between formal-semantic therapy with a SR method and a simple repeated practice method. Assessment and treatment procedures were appropriate and well described. Using visual inspection and appropriate non-parametric analyses, post-treatment results revealed a clear increase on trained items while untrained items remained at baseline. TBo obtained better results with SR than with simple repetition however the difference between the two methods was not statistically significant. No generalization effects were recorded between trained items and control items belonging to similar semantic categories.

Overall, this study provided some limited evidence of immediate post-treatment gains in naming ability, but no evidence for g

Due to the way therapy was carried out with the two patients involved and the way the data was analyzed, overall, this study only provided extremely limited evidence of post-treatment gains in naming accuracy for an individual with LPA for trained categories.

Graham, Patterson, Pratt, & Hodges (1999)

These authors chose to investigate the naming performance of an individual with SD (DM) by using three separate experiments. It should be noted that DM is considered an exceptional patient and therefore generalization of the results from this study to other patients may be limited. His extensive practice schedule included phonologic and semantic stimulation and his anomia impairment was not profound. DM's diagno

Therefore, it is important that speech-language pathologists are aware that intervention can be beneficial for naming difficulties in PPA. Speech-language pathologists can and should initiate intervention with all patients with all varieties of PPA