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Development of an evidence-based aphasia therapy implementation tool: introducing the Aphasia Therapy Finder

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ABSTRACT

Background: Clinical practice guidelines support the use of aphasia therapy to reduce language impairment and communication disability. Aphasia is a heterogeneous condition and many therapy approaches are used in clinical practice. Selecting appropriate therapies and accessing therapy resources can be challenging for clinicians. The Aphasia Therapy Finder (ATF) is an implementation tool for speech-language pathologists designed to bridge the evidence-practice gap in aphasia rehabilitation.

Methods & Procedures: Discussions with speech-language pathologists (SLPs) and an international survey confirmed that therapists struggle to stay abreast of the latest aphasia rehabilitation evidence. SLPs' priorities informed the development of the ATF. Initially, a prototype web-based repository of therapy descriptions and resources was developed and tested with clinicians around the world. Following user testing, additional content was developed and deployed on the ATF.

Outcomes: The ATF is a free searchable database (www.aphasiatherapyfinder.com) that contains detailed therapy descriptions for 25 evidence-based aphasia therapies and links to the resources clinicians need to use the therapies in their clinics. Therapy descriptions have been rigorously produced with input from over 60 aphasia researchers. User testing has validated the ATF functionality and content.

Conclusion: The Aphasia Therapy Finder provides a mechanism to reduce the evidence-practice gap in aphasia rehabilitation

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and, thereby, improve access to high quality evidence-based therapy for people with aphasia around the world. Future work will expand the ATF and evaluate its utility as an implementation tool.

Despite strong evidence supporting aphasia rehabilitation (Brady et al., 2016), many people with aphasia do not receive care that aligns with clinical guidelines (Cavanaugh et al., 2021; M. Rose et al., 2014), often due to resource limitations or inadequate implementation of evidence-based practices into routine care (Arnold et al., 2020; Shrubsole et al., 2019). Speech-language pathologists (SLPs) have consistently identified a lack of resources as a major barrier to delivering effective aphasia therapies (Monnelly et al., 2023; M. Rose et al., 2014; Shrubsole et al., 2019) and there is no central repository for aphasia therapy evidence summaries and resources. In response to this, a team of researchers from the Collaboration of Aphasia Trialists (Working Group 4: Effectiveness of aphasia interventions) designed, developed, tested, and disseminated the Aphasia Therapy Finder (ATF), a searchable database that provides accessible evidence summaries of aphasia therapies and practical resources for implementing these approaches in clinical settings.

In this commentary, we report on discussions with SLPs and an international survey that aimed to identify the core requirements of the ATF; the development and user testing of the ATF prototype; the expansion and dissemination of the ATF through international collaboration with over 60 aphasia researchers and clinicians; and plans for the maintenance and future enhancements of the ATF. The aim is to introduce the ATF to speech-language pathologists working with people with aphasia.

Clinician discussions

Twenty-four clinicians from Australia and the USA attended one of two video conferences in early 2021. The aims of these discussions were to gather information about how clinicians accessed evidence-based aphasia therapy resources, identifying barriers and facilitators to access, and to gauge clinicians' interest in, and brainstorm ideas for, the ATF. Attendees reported using a broad range of resources to stimulate and facilitate aphasia therapy including paper-based therapy exercise books (such as the Workbook of Activities for Language and Cognition series (Tomlin, 2002)), physical resources (e.g., whiteboard, everyday objects for matching/sorting, picture cards, letter tiles), online language and conversation stimuli (e.g., print media, TED Talks, TV shows, Facebook), and digital tools (e.g., tablet with therapy apps, client's own device). Attendees reported working with clients and families to produce personalised resources (e.g., core vocabulary lists tailored to each client) or making use of personal photos (e.g., family, pets, significant life events). The use of therapy apps was common. Consistent with survey respondents, attendees reported sourcing information about new evidence-based aphasia therapies through journal articles, websites such as EnableMe (https://enableme.org.au/) and SpeechBite (https://speechbite.com/), professional development events such as conferences or research symposia, and special interest groups. Attendees who had access to peer-

reviewed journals acknowledged that searching for journal articles was time-consuming. Attendees who did not have access to academic journals reported cost was a barrier.

Attendees identified as being time-poor. They reported requiring quick, practical guidance on implementing therapy. There was enthusiastic support for a searchable resource for aphasia therapy approaches that included video tutorials. A mobile-friendly website was preferred over an app for ease of access across different settings (e.g., at home, in hospital). Attendees voiced a preference for broad, flexible search criteria (e.g., by therapy approach, linguistic breakdown) and less need for searching by level of evidence, though listing evidence would still be beneficial. Attendees identified the desire for specific dosage and intensity recommendations and outcome measurement instruments. They wanted video guides and support for therapy assistants to implement therapies. Attendees also called for resources to be adapted for different languages and cultural groups and patient-friendly explanations of therapy. Attendees reported being willing to pay for the ATF but acknowledged that cost would be a barrier to access in under-resourced locations.

International survey

As previously reported (Dignam et al., 2024), 176 speech pathologists across 19 countries participated in a cross-sectional survey exploring SLPs' access to and use of aphasia therapy resources. SLPs reported using 43 different therapy approaches in aphasia rehabilitation, placing high importance on research evidence when selecting therapy approaches. Respondents reported typically obtaining information regarding new therapy approaches from academic sources including conferences, research literature, and professional development workshops. Resource limitations, including time and budget constraints, were barriers to implementing evidence-based aphasia therapy approaches in clinical settings. Respondents identified the following priorities for development of the ATF: recency of research evidence, equity of access with the inclusion of linguistically and culturally diverse resources, and usability of resources.

The Aphasia Therapy Finder

Phase 1: Prototype development

The Tavistock Trust for Aphasia provided funding for the development of a prototype web-based application (web-app). This phase involved developing the web-app architecture, selecting a small number of therapies to include on the prototype ATF, writing therapy profiles for selected therapies, and testing the usability of the prototype.

Web-app architecture

The project team engaged a software developer who had previously worked with members of the project team to build an aphasia therapy website. The developer initially drew wireframes to establish the look and feel of the web-app, then set up three components to enable functionality: a database to store digital assets (e.g., text, images, videos) and the web-app code (e.g., HTML, CSS, Javascript); a user interface containing sign up and login pages, therapy profiles, search function, and additional content such as an about

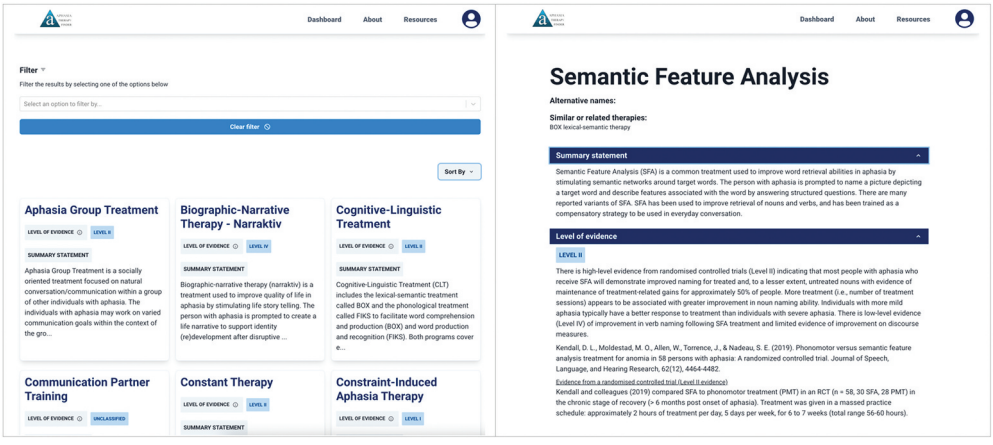

Figure 1. Screenshot of the dashboard showing the filter and several therapy index cards (left) and an excerpt of a therapy profile (right).

page and resources page; and, a content management system used by the project team to upload content (e.g., therapy profiles, videos) to the web-app. With a view to sustainability of the ATF, key considerations for the selection of third-party services (i.e., database and content management system) were ease of use and low cost. The project team produced an ATF logo and branding.

Therapy profiles

When users log into the ATF, they arrive at the *dashboard* which displays a search filter and a series of *therapy index cards* (Figure 1). Therapy index cards display the name of the therapy, a level of evidence badge, and a summary statement. Clicking on a therapy index card takes the user to the detailed *therapy profile* for the selected therapy.

A therapy profile template was developed based on the Rehabilitation Treatment Specification System (Van Stan et al., 2019) to ensure comprehensive and consistent description across therapies. The template included the following sections: Summary statement; Therapy targets including ICF domain(s), therapeutic targets, client selection criteria, goals; Treatment ingredients including a link to the therapy protocol, key therapeutic principles, therapy mode, method, and resources; Mechanisms of action; and, Additional resources. A rating of the level of scientific evidence using the NHMRC hierarchy (Merlin et al., 2009) is also included. Evidence hierarchies summarise levels of scientific evidence. The NHMRC hierarchy bases this evaluation on the study design with the highest level of evidence for treatment studies attributed to systematic reviews of all rigorously conducted randomised controlled trials and the lowest level of evidence attributed to case studies or expert opinion (Merlin et al., 2009). The template was iteratively refined as therapy profiles were written.

During the prototype phase, four therapies with high-level evidence and representing different elements of the World Health Organisation International Classification of Functioning, Disability and Health (e.g., activity, function, and environment; World Health Organization, 2001) were selected by project team consensus: Constraint-Induced Aphasia Therapy (Pulvermuller et al., 2001), Semantic Feature Analysis (Boyle,

2010), Communication Partner Training (Purdy & Hindenlang, 2005), and Script Training (Youmans et al., 2005). Detailed therapy profiles including critical review of the therapy method were drafted by members of the authorship group with assistance from primary authors of the specific therapy approaches, where available. Each profile was reviewed and approved by the authorship group before being deployed to the prototype web-app prior to user testing. Additional content was developed for webpages containing information about the project, general assessment and therapy resources, and the terms and conditions of website usage. As noted by clinicians in discussions and in the survey, it was difficult to locate and acquire therapy-specific resources and videos. While resources and videos do exist, the distribution of these resources was frequently constrained by ethical and intellectual property considerations, and often held privately by research institutions.

User testing of the prototype

In early 2022, an international group of clinicians who attended focus groups or who lived and worked in historically under-represented or under-resourced locations were invited to test the prototype and provide feedback on functionality and content. Testers ($n = 7$ from Australia, Ghana, India, and the USA) were provided with an "issues log" and were guided to interact with each section of the prototype including the sign up/login page, navigation bar, about page, resources page, terms and conditions page, therapy index cards, and therapy profiles. Overall, the testers were very enthusiastic about the prototype. One clinician from India commented "Overall this was great and comprehensive", while a clinician from Australia said "Having the video example is FANTASTIC". A comment from a clinician from Ghana hinted at the potential value of the ATF: "From my view, we do not really have open access to most of these articles. Being provided with such information will educate the therapist and make it easier explaining to families or other professionals the 'WHY' behind a certain approach". In total, the testers provided 38 suggestions for improvements which included streamlining navigation around the site, improving consistency of terminology used across therapy profiles, and identifying additional resources for inclusion in the ATF. No major issues were identified. The project team and software developer coded the feedback into categories relating to web-app accessibility, appearance, or function and content accuracy, clarity, or consistency. Each suggestion was assigned a priority ranking: high (must be resolved in Phase I), medium (aim to resolve in Phase I), low (aim to resolve in Phase II). Twenty-four high priority changes relating to the web-app functionality and the accuracy, clarity, and consistency of therapy profile content were implemented. Following successful deployment of the ATF prototype, additional funding was sought to expand the ATF.

Phase 2: Expanding and disseminating the ATF

The project team identified a shortlist of aphasia therapies and selected an additional 21 therapies to include in the ATF (Table 1). Therapies targeting improvement across domains of the International Classification of Functioning, Disability and Health were selected for inclusion on the basis of having the highest scientific evidence, with consideration of clinician survey responses. International aphasia therapy experts involved in the development and evaluation of selected therapies were invited to write the therapy profiles which were then subjected to a 2-step editing process before being approved by

Table 1. Alphabetical list of the 25 therapies profiled on the aphasia therapy finder.

Aphasia Group Therapy (Elman & Bernstein-Ellis, 1999)
Biographic-Narrative Therapy (Narraktiv; Corsten et al., 2015)
Cognitive-Linguistic Treatment (Visch-Brink et al., 1997)
Communication Partner Training (CPT; Youmans et al., 2005)
Constant Therapy (Des Roches et al., 2015)
Constraint-Induced Aphasia Therapy (CIAT; Pulvermuller et al., 2001)/Intensive Language Action Therapy (ILAT)
Copy and Recall Treatment (CART; Beeson et al., 2003)
Intensive Comprehensive Aphasia Program (ICAP; M. L. Rose et al., 2022)
LUNA (Language Underpins Narrative in Aphasia; Dipper et al., 2024)
Listen-In (Fleming et al., 2021)
Mapping Therapy (Schwartz et al., 1994)
Melodic Intonation Therapy (MIT; Albert et al., 1973)
Multi-Modality Aphasia Therapy (M-MAT; M. L. Rose et al., 2019)
Narrative and Discourse in Aphasia (NADIIA; Whitworth, 2010)
Oral Reading for Language in Aphasia (ORLA; Cherney, 2010)
Peer Befriending (Hilari et al., 2019)
Phonological Components Analysis (PCA; Leonard et al., 2008)
Phonomotor Treatment (PMT; Kendall et al., 2008)
Promoting Aphasic Communicative Effectiveness (PACE; Davis, 2005)
Script Training (Youmans et al., 2005)
Semantic Feature Analysis (SFA; Boyle, 2010)
Speech Entrainment Therapy (SET; Fridriksson et al., 2012)
StepByStep computer-based therapy for word finding (Palmer et al., 2020)
Treatment of Underlying Forms (TUF; Thompson & Shapiro, 2005)
Verb Network Strengthening Treatment (VNeST; Edmonds et al., 2009)

the project team for addition to the ATF. This phase also included the procurement and development of therapy-specific resources, including therapy manuals and instructional videos whenever possible.

The ATF was officially launched at the International Aphasia Research Conference in July 2024. Dissemination via national and international newsletters, communities of practice, special interest groups, teaching universities, online forums, and social media is ongoing. As of March 2025, there were 3930 registered users from 80 countries.

Phase 3: Maintenance, evaluation, and future directions

Clinicians value high-quality, up-to-date information. Over the next three years, the project team will conduct periodic evidence updates for the 25 therapies profiled in the ATF. Therapies identified during that process as having emerging moderate- to high-level evidence will be considered for inclusion. The project team will also seek to understand how the ATF functions as an implementation tool in real-world clinical environments and, in future work, will invite clinicians, students, and researchers to share their experiences as ATF users. Finally, clinicians working in culturally and linguistically diverse communities seek appropriate therapy resources and adaptations of evidence-based aphasia therapies to improve aphasia treatment accessibility and equity. We aspire to work with clinicians and researchers around the world to facilitate the development and adaptation of culturally and linguistically responsive evidence-based aphasia therapies, and to include these on the ATF.

Limitations

The ATF is a work in progress. Locating, procuring and developing high-quality therapy resources is an enduring challenge. It is acknowledged that clinicians and researchers create and retain therapy resources, but do not necessarily have a way to share these. At present, ATF users cannot share and/or evaluate therapy resources within the web-app. We invite clinicians and researchers to contact the ATF project team should they wish to share resources. Secondly, although we sought global contributions to the development and user testing of the ATF, we acknowledge that consultation was typically conducted with English-speaking clinicians and researchers. Future cultural and linguistic adaptation of ATF resources will need to engage broadly beyond English-speaking clinician and researcher communities. Lastly, the effectiveness of the ATF as an implementation tool will be evaluated in future work.

Conclusion

The Aphasia Therapy Finder provides access to therapy descriptions and resources for 25 evidence-based aphasia therapies. While developed to address clinical demand, the ATF is likely to be a valuable resource for SLP educators and students. People who have aphasia may also find the ATF useful in understanding different therapy approaches and may use that information in advocating for access to various evidence-based therapy approaches. Future work will evaluate the effectiveness of the ATF as a mechanism to reduce the evidence-practice gap in aphasia rehabilitation and, thereby, improve access to high quality evidence-based therapy for people with aphasia around the world.

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