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Editorial

Innovative use of technology in aphasia

Information and Communication Technology (ICT) has the potential to improve the everyday lives of people living with aphasia. Previous special issues focusing on technology and aphasia highlight how digital technologies can be used in clinical practice for assessment and rehabilitation as well as the use of technology for daily life (Salis & Hwang, 2016; Petheram, 2004). Technology continues to advance exponentially, with the Internet making health and social information readily available at the click of a button.

ICT is often utilised as a means for Augmentative and Alternative Communication (e.g., Wallace, 2020) and while there is a need for larger and more methodologically robust trials, it has been shown to be an effective method of providing aphasia rehabilitation (Repetto, Paolillo, Cosimo, Bellinzona & Riva, 2021; Lavoie, Macoir & Bier, 2017; Brady, Kelly, Godwin, Enderby & Campbell, 2016; Zheng, Lynch & Taylor, 2016). The potential for enhancing the quality of life for people with aphasia includes facilitating increased social connection and peer support (e.g., Kelly, Masterson, O'Riordan & Scott, 2022; Amaya et al., 2018; Kelly, Kennedy, Britton, McGuire & Law, 2016), and the independent management of daily life tasks (e.g., Nicol et al., 2022; Cistola, Farrus & van der Meulen (2021); Kelly et al., 2016). However, while advances in technology aim to facilitate digital autonomy and offer more efficient access to health and social information, the digital divide experienced by people with communication impairment, such as aphasia, compared to the general population is still an issue some 20 years following Petheram's special issue.

In the height of the coronavirus global pandemic, in order to contain the spread of the virus and protect vulnerable patients, many countries introduced closures of schools, workplaces, and non-essential services in addition to social distancing and travel restrictions (Conway et al., 2021). Furthermore, there was great pressure on the health services and much of the management of aphasia (e.g., Hilari, Roper, Northcott & Behn, 2023; Teti, Murray, Orange, Page & Kankam, 2023) and opportunities for supported social conversations for people with aphasia, were undertaken using telehealth (e.g., Bell, Horgan & Kelly, 2024; Kearns & Cunningham, 2023). The response to this unique situation in history resulted in exponential technological growth and innovation. Reflecting some of these innovations and developments, the range of topics presented in this Special Issue showcase innovative approaches to aphasia research, assessment, intervention, and participation. While post-stroke aphasia and Primary Progressive Aphasia (PPA) differ in the brain mechanisms that cause their symptoms, they are health conditions that have some common features. In order to facilitate learnings across different aetiologies, we decided to embrace research that includes participants with post-stroke aphasia or PPA.

Two papers in this special issue employed technology for telehealth. Gauch, Corsten, Geschke, Heinrich & Spelter's (2024) cross-over study design compared the equivalence, modality use, and patient satisfaction of the administration of the Scenario Test with people with PPA, through videoconferencing. Chadd, Harding, Mortley & Enderby (2024) explored the barriers and facilitators to adopting telehealth in clinical practice and then co-designed and evaluated its feasibility with people with post-stroke aphasia. This study also explored the merit of collecting real-world data in the evaluation of clinical practice.

The exciting and innovative advancement and potential for Virtual Reality and Artificial Intelligence in aphasia were the focus of two papers. EVA Park is an online, virtual world that has pioneered the development and evaluation of Virtual Reality (VR) in aphasia. The article by Marshall et al. (2024) presents two case studies of people with aphasia which explores the feasibility, treatment fidelity, effectiveness, and acceptability of hosting Script Therapy using EVA Park. The emergence and rapid development of Artificial Intelligence (AI)

suggests potential for its contribution to healthcare (Anderson & Sutherland, 2024). The considerable scope and potential for utilising AI in aphasia clinically and in research is an exciting prospect (Adikari et al., 2023). Pottinger & Kearns (2024) undertook a mapping review of big data and AI in post-stroke aphasia for this Special Issue and advise on the need for future research on this growing area of technological advances.

Our Spotlight paper (Brodie, Brodie & Raymond, 2024) draws our attention to the online management of finances being one area where the digital divide is particularly notable. This paper describes a computer scientist's experience of speech and language therapy following his stroke and his motivation to develop a pioneering software solution to banking, in collaboration with his wife, also a computer scientist, and his speech and language therapist. The banking app simulates the online banking experience and can be used in speech and language therapy sessions to work on goals related to these skills. They highlight the importance of collaborations between people living with aphasia and speech and language therapy clinicians, to ensure that technological self-management tools are available and are relevant to the real world. We hope this will inspire people living with aphasia to not only participate in research but also to lead the way as expert research collaborators.

Technology can also serve to bring people together socially or in a supportive way. Bell, Horgan & Kelly (2024) investigated their Aphasia Café from the perspectives of people with aphasia and the speech and language therapy students who support them. This study was undertaken within the context of pandemic-related social restrictions and so includes discussions around preferences for online versus in-person socialising. This study underscores the importance of inclusive platforms for facilitating social connection and support networks among individuals affected by aphasia.

One particular strength of this Special Issue is that the essential component of listening to the voices of people with aphasia is threaded throughout the included research, either through participant feedback (Gauch et al., 2024; Marshall et al., 2024), exploration of participant opinions regarding a service (Bell et al., 2024) or actively involved in co-design (Brodie et al., 2024; Chadd et al., 2024). Co-design has increased in importance and practice within healthcare research (Palmer et al., 2019). It can involve and draw on insights from a diverse range of stakeholders with a focus on the end-users of the knowledge, service or intervention actively collaborating in the process (Vargas, Whelan, Brimblecombe & Allender, 2022; Dobe, Gustafsson & Walder, 2023). Its application in healthcare enables public involvement from service users with valuable lived experience that can influence healthcare developments (Palmer et al., 2019) and while some challenges are noted, co-design is considered beneficial with positive outcomes (Slattery, Saeri & Bragge, 2020). While there are nuances in meaning across co-design, co-production and co-creation, these approaches all fall under the umbrella of participatory action research, and all have a common emphasis on user involvement (Vargas et al., 2022). A recent scoping review identified a range of participants involved in co-creation research within stroke rehabilitation, including, not only stroke survivors, but also carers, healthcare professionals, IT experts as well as commissioners and policy makers (Dobe et al., 2023).

It has been a great pleasure to serve as Guest Editors for this Inaugural Special Issue on the "Innovative use of Technology in Aphasia". This issue brings together research relevant to the use of technology in the assessment and treatment of aphasia, as well as social interactions (including peer support) and practical applications that can influence future research and clinical practice, thus having a potential positive impact on the everyday lives of people living with aphasia.

Collaborations between academics, speech and language therapy clinicians and people with the lived experience of aphasia highlight the essential need for dialogue and partnership in the future development and evaluation of technology. It is our hope that people living with aphasia will be considered central to the developments of accessible technology and be invited into research as experts to ensure that the often-experienced digital divide is reduced and aligned with the rapid advances of technology. Menger, Morris & Salis (2020) highlight barriers experienced by people with aphasia in accessing technology, some of which are factors other than aphasia. Overcoming barriers to digital autonomy and accessibility of technology-based information will have global impact. It will serve to progress The United Nations' Sustainable Development Goals (SDGs) (United Nations, 2015), for example, Reduced Inequalities (SDG 10), Good Health and Wellbeing (SDG 3) as well as facilitating access for technology-based Quality Education and lifelong learning (SDG 4). Proactively addressing

the digital divide collaboratively will level the playing field for those with communication impairments, such as aphasia.

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Guest Editors
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