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Communication partner training delivered face-to-face and via telepractice with health professionals, health professional students and people with aphasia.

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Abstract

Aphasia masks the inherent competence of an individual due to disease or impact to areas of the brain responsible for language. An individual may have difficulty with talking, understanding, reading, writing or a combination of these; depending on the location of the lesion, type and severity of aphasia. When an individual's ability to participate in conversation is impaired, every single relationship, life role and activity in his or her life is at risk. Aphasia has the potential to incite isolation and impact mental and physical health, through a reduction in self-identity. Aphasia affects approximately one-third of the stroke population and as such, it has implications for interactions with health professionals (HPs) and important healthcare decisions. Hence, there is scope for healthcare providers to receive education about aphasia and understand it is not just in the remit of speech-language pathology (SLP). Moreover, a SLP's work is not limited to direct language and functional communication therapy for people with aphasia (PWA). Rather, there is a duty of care to advocate for communication access and encourage a holistic, collaborative healthcare service between all consumers and providers. It is therefore important that system changes occur to ensure that communication is seen as an essential activity of daily living, just as the inability to walk up stairs or not manage routine household tasks (e.g. make a cup of tea) are viewed.

Communication partner training (CPT) offers a potential solution to minimise communication barriers, facilitate meaningful conversations and promote involvement in everyday activities, including healthcare decisions and salient exchanges with HPs and HP students. In its essence, CPT provides an opportunity to acknowledge and reveal the competence of an individual with aphasia, using techniques identified as being effective in supporting communication exchange. Supported conversation tools provide a vehicle of *how* to have a conversation without being prescriptive to conversation content. Further, the use of synchronous (real time) telepractice may provide an ideal platform to allow CPT delivery within a dynamic, time-constrained environment. The overall aim of this thesis was to investigate the impact of implementing a CPT program on PWA, HPs and HP students in order to contribute to the evidence base for improving efficiency of communication for people with communication impairments accessing healthcare. One specific aim was to determine whether a synchronous telepractice model could be a feasibly effective method for providing CPT. In order to address the thesis aim, a series of six studies, resulting in eight manuscripts, were conducted.

Study 1 (Chapter 2) explored whether CPT affected the conversational interactions of SLP students when required to communicate with PWA. A randomised crossover trial was completed with a small cohort (n = 38) of SLP students. This study found that SLP students did improve in their ability to communicate with PWA following the completion of face-to-face CPT. Study 2 (Chapter 3) involved a convenience sample of (n = 28) occupational therapy (OT) and physiotherapy (PT) students and explored whether they also had low confidence and limited knowledge of communication strategies when interacting with PWA. The results reported by OT and PT students were analogous with those reported in Study 1. These studies identified under preparedness of students to confidently and knowledgeably interact with individuals with communication difficulties in a professional capacity. They also highlighted the potential benefit for inclusion of a practical skills component (i.e., CPT) as an adjunct to existing practicum and theoretical course content.

Based on the learning's from Studies 1 and 2, investigation into HPs' confidence and knowledge for communicating with PWA in a clinical context was conducted. Study 3 (Chapter 4) included 90 HPs who provided baseline data about current knowledge and strategies for engaging with PWA and Study 4 (Chapter 5) employed a cross-sectional pre-post intervention design with 52 HPs who completed face-to-face CPT. These studies provided preliminary evidence to suggest CPT does improve the success of communication between HPs and PWA. Subsequently, a synchronous telepractice (real time video teleconferencing system) application of CPT (Study 5, Chapter 6) with 60 HPs was conducted. Findings of this study suggested that there was no superior group difference. There was no difference between both modes of delivery in improving HPs' confidence and knowledge of strategies for interacting with PWA. In Study 6 (Chapter 7), the experiences of PWA and HP students involved in the CPT program were explored through qualitative analysis of transcripts from a focus group and feedback sessions. Overall, the PWA reported improved confidence and purpose from engaging in the training. HP students not only reported improved confidence and knowledge, but also valued the opportunity to gain practical learning experience in a non-threatening, non-assessable setting.

The final chapter of the thesis (Chapter 8) provides a summary of the findings, limitations, clinical implications and areas for future research. This thesis provides evidence to support the use of CPT via face-to-face or synchronous telepractice formats, to improve communication competence between HPs, HP students and PWA to foster positive holistic health provision.

Declaration by author

This thesis is composed of my original work, and contains no material previously published or written by another person except where due reference has been made in the text. I have clearly stated the contribution by others to jointly authored works that I have included in my thesis.

I have clearly stated the contribution of others to my thesis as a whole, including statistical assistance, survey design, data analysis, significant technical procedures, professional editorial advice, financial support and any other original research work used or reported in my thesis. The content of my thesis is the result of work I have carried out since the commencement of my higher degree by research candidature and does not include a substantial part of work that has been submitted to qualify for the award of any other degree or diploma in any university or other tertiary institution. I have clearly stated which parts of my thesis, if any, have been submitted to qualify for another award.

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Publications during candidature

Peer-reviewed papers

Cameron, A., Hudson, K., Finch, E., Lethlean, J., Fleming, J., & McPhail, S. M. (2018a). "I've got to get something out of it. And so do they": Experiences of communication partner and university students participating in a communication partner training program for healthcare professionals. *International Journal of Language & Communication Disorders.* doi:10.1111/1460-6984.12402.

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Finch, E., Cameron, A., Fleming, J., Lethlean, J., Hudson, K., & McPhail, S. M. (2017a). Does communication partner training improve the conversation skills of speech-language pathology students when interacting with people with aphasia?. *Journal of Communication Disorders*, *68* 1-9. doi:10.1016/j.jcomdis.2017.05.004 – incorporated as Chapter 2.

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Contributions by others to the thesis

The PhD candidate was primarily responsible for refining the concept and design of the studies, ethical approval processes, participant recruitment, data collection, data analysis and interpretation, and manuscript preparation. However, the following people have made significant contributions to the thesis as a whole:

Dr Emma Finch, Associate Professor Steven McPhail, Dr Kyla Hudson, Professor Jennifer Fleming and Dr Jennifer Lethlean had substantial input into the concept and design of this research project, the collation and interpretation of the data, clinical support for participation recruitment, data collection and critical appraisal of written work.

SLP Hons. student Nang Ju Tan contributed to data collection and preliminary drafting for Study 3 (Chapter 4).

To the best of my knowledge and belief, no person who has offered contributions consistent with the above has been excluded as an author. Persons who have contributed to the work but not at a level that constitutes authorships have been acknowledged in the text.

Statement of parts of the thesis submitted to qualify for the award of another degree

None.

Research Involving Human or Animal Subjects

Ethical clearance has been obtained for this project by the Metro South Health Service District Human Research Ethics Committee and UQ Institutional Approval Form for Experiments on Humans including Behavioural Research (Project number: 2011000801) (Appendix A).

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Aphasia, stroke, communication partner training, healthcare access, health professionals, health professional students, telepractice, supported conversation, training needs, confidence

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"I've learned that people will forget what you said,
people will forget what you did,
but people will never forget how you made them feel."
- *Maya Angelou*

This thesis is dedicated to the inspiring souls
who continue on despite great adversity and to those who have the courage
to be a rainbow in someone's cloud.

Table of Contents

LIST OF FIGURES

LIST OF TABLES

LIST OF ABBREVIATIONS USED IN THE THESIS

AAC	Alternative Augmented Communication
AHA	Allied Health Assistant
AIC	Akaike's Information Criterion
ANZSRC	Australian and New Zealand Standard Research Classifications
AQ	Aphasia Quotient
FoR	Fields of Research
APA	American Psychological Association
CBOS	Clinical Based Occupational Standards
CCTV	Closed Circuit Television
CPS	The Communication Partner Scheme
CPT	Communication Partner Training
DN	Dietitian
HP	Health Professional
IQR	Interquartile Range
MREC	Medical Research Ethics Committee
MPC	Measure of Participation in Conversation
MSC	Measure of skill in Supported Conversation
OT / OTs	Occupational Therapy / Occupational Therapists
PAH	The Princess Alexandra Hospital
PT / PTs	Physiotherapy / Physiotherapists
PWA	People with Aphasia
QoL	Quality of Life
SCA™	Supported Conversation for Adults with Aphasia
SW / SWs	Social Work / Social Workers
SLP / SLPs	Speech-Language Pathology / Speech-Language Pathologists
SPSS	IBM Statistical Software for the Social Sciences
UQ	The University of Queensland
VAS	Visual Analogue Scale
WAB	Western Aphasia Battery

CHAPTER 1

Introduction
&
Literature Review

1.1 An Introduction and Overview of Aphasia and CPT

Human language is often thought of as a unique, fundamental system that separates humans from other species. By the age of four, most humans have developed an ability to communicate though verbal language. By seven, most humans have the ability to understand and express written thoughts. Now take a moment and imagine being cut-off from the world. Feeling like a foreigner in your own country. Having your competence masked. Being intelligent but unable to communicate. Unable to successfully engage in the most basic of human behaviours. Welcome to life with aphasia. Chapter 1 aims to provide the introduction to the current thesis, by giving the reader an overall summary of the relevant literature. This will include a background and overview of aphasia; discussion of the multi-faceted impact aphasia has on effective communication for PWA and their communication partners; and highlight current management and related healthcare provision for PWA. The chapter will introduce the reader to the topic of supported conversation techniques, with particular focus on the body of evidence related to CPT. It will then explore the current education and training provided to HPs and HP students, the scope of application using different delivery methods, and the proposed benefits of providing training within a healthcare setting. Chapter 1 will then conclude with a statement of the overall objective, aims and hypotheses of the current thesis and future translation into practice.

1.1.1 Epidemiology of aphasia

Aphasia is a language difficulty that masks the inherent competence of an individual, and has its most significant impact on conversational interactions (talking and understanding) as well as the ability to read and write (Kagan, 2017). Aphasia is the result of injury or disease to the brain centres responsible for language (Nadeau, Rothi, & Crosson, 2000). According to the Stroke Foundation (2012) there are approximately 420,000 people living with the effects of a stroke in Australia, with 30% of these people being of working age (<65 years). In 2012 alone there was an estimated 50,000

Australians who suffered a new or recurrent stroke. Pedersen, Jørgensen, Nakayama, Raaschou & Olsen (1995) found that 38% of people present with aphasia following stroke on admission to hospital, with aphasia persisting in 18% of people on discharge. The burden of stroke is well documented in the literature, in terms of both mortality and disability (Zhang, Chapman, Plested, Jackson, & Purroy, 2012). In Australia, stroke is the leading source of disability and the second highest cause of death (Stroke Foundation, 2012). This is reflected in previous research (Dickey et al., 2010; Lalor & Cranfield, 2004; Zhang et al., 2012) that has also identified a high prevalence rate of stroke throughout Canada, United States of America, United Kingdom and Europe (France, Germany, Italy, Spain).

1.1.2 Presentation and impact of aphasia

Fundamentally, relationships and communication are defining features of being human (Siegel, 2013). Due to the debilitating nature of aphasia, it can create a significant barrier to communication. As a result, this can lead to social isolation, depression, exclusion from decision-making processes and a reliance on carers to facilitate engagement with the outside world (Parr, 2007; Simmons-Mackie & Damico, 2007; Ross, Winslow, Marchant & Brumfitt, 2006). According to Kagan (1998), people are often unaware (or underestimate) the cognitive and social competence of PWA and as such, PWA are often excluded from decisions about their own daily life and healthcare. Equally, people tend to avoid conversations with PWA, as they are deemed unable to participate (Kagan, 1998). The result of this is a minimisation of the opportunities for PWA to engage in an important social function used for establishing and maintaining relationships, making plans and sharing ideas. This can have detrimental implications for a person with aphasia's quality of life (QoL) and psychosocial wellbeing, as well as concealing their inherent competencies (Kagan, 1998; McVicker, Parr, Pound, & Duchan, 2009; O'Halloran, Hickson, & Worrall, 2007; Parr, 2007; Rayner & Marshall 2003; Ross et al., 2006).

The communication difficulties associated with aphasia can create significant barriers to the involvement of PWA across various settings such as, social participation, medical management and rehabilitation (Leach, Cornwell, Fleming, & Haines, 2010; Lyon et al., 1997). A person with aphasia may be unable to ask questions related to their medical condition or treatment and as a result, family members or significant others are often responsible for obtaining such information (Parr, 2007; Leach et al., 2010). Aphasia also has other related costs to the individual, family, significant others and the healthcare system at large. Health economy is interested in 'value', that is, the degree to which something is deemed useful for solving problems or meetings goals (Horton, Clark, Barton, Lane & Pomeroy, 2016a). Therefore, it is crucial that aphasia management is described in such a way as to demonstrate its capacity to solve a 'problem'.

1.1.3 Supported conversation techniques

CPT is one potential method to reduce communication barriers. CPT is an intervention that directly targets the communication partner and explicitly teaches them strategies and supports to facilitate communication, rather than training the person with aphasia (Simmons-Mackie, Raymer, Armstrong, Holland, & Cherney, 2010). A communication partner refers to anyone a person with aphasia may interact with in their home or community environments (i.e. family members, friends or HPs). CPT can also include training of PWA, as defined by Simmons-Mackie et al., (2010) and highlighted in the studies included in this thesis. The complexity of CPT is borne through training one individual and expecting there to be changes in another individual's communication skills/participation. In a review of the evidence of SLP interventions, it was found that CPT improves conversational skills and can result in improved access to conversation, in addition to increased social participation for both the PWA and trained partners (Salter, Teasell, Foley, & Allen, 2015). Interestingly, 'social chat' and consequently CPT are considered therapy, as changes in language impairment occur when an individual with aphasia is having a conversation (Chapey et al., 2000; Horton, 2017). It is well documented in the aphasia literature that supported conversation techniques, employed by trained communication partners, can help to overcome communication barriers, promote re-engagement in decision making (everyday life and healthcare) and empower PWA to use their intact cognitive and social skills to participate in conversations (Kagan, Black, Felson, Duchan, & Simmons-Mackie, 2001; Kagan 1998; McVicker et al., 2009; Simmons-Mackie, 2009; Simmons-Mackie et al., 2010).

Numerous studies have found that PWA participate more effectively in conversations with trained partners compared to untrained partners (Cunningham & Ward, 2003; Kagan et al., 2001; Simmons-Mackie, 2009). A systematic review by Simmons-Mackie et al. (2010) found that skilled communication partners were invaluable in promoting communication across a range of differentially diagnosed types of aphasia. Interestingly the evidence implied that CPT was more beneficial for individuals communicating with people who have chronic aphasia. However, in terms of supporting communication for PWA, CPT is recommended at all stages of rehabilitation and across all levels of severity as an effective method for improving partner skills and increasing the opportunities for genuine engagement. The review identified that all communication partners could benefit from CPT, particularly as the effects of training are generalisable and maintained over time (Simmons-Mackie et al., 2010). Other studies looking at family and volunteer populations have also found support for the documented belief that supported conversation not only allows a person with aphasia to be treated as a competent adult, but affords the opportunity for them to engage in genuine conversations rather than just directed questions for the purposes of information gathering (Kagan et al., 2001; Parr, 2007; Pound, Duchan, Penman, Hewitt, & Parr, 2007; Ross et al., 2006). To date,

most of the CPT research has focussed on training family members and volunteers, despite HPs being key communication partners for PWA (Kagan et al., 2001; Lyon et al., 1997; Simmons-Mackie & Damico, 2007).

1.1.4 Confidence and knowledge of HPs and HP students

The possibility of interacting with a person who has an acquired language disorder can cause elevated levels of anxiety, reduced confidence and may create an inaccurate perception of the person's level of function (Hill, Davidson, & Theodoros, 2010; Kagan, 1998). In many rehabilitation settings, CPT is primarily conducted by a SLP and is focussed on family members and carers, with only ad hoc training provided to HPs (Cunningham & Ward, 2003; Kagan et al., 2001; McVicker et al., 2009). Knight, Worrall and Rose (2006) reported that the amount of time spent disseminating health information was directly influenced by the presence of aphasia following a stroke. When communicating with stroke patients without aphasia, 22% of HPs' time was devoted to the dissemination of health information. Comparatively, only 7% of the HPs' time was spent on information dissemination when communicating with stroke patients with aphasia. Interestingly the researchers also identified that the patients reported heightened anxiety over the lack of health information provided (Knight et al., 2006). O'Halloran, Worrall and Hickson (2011) proposed that one obstacle to engaging PWA in healthcare decisions is the ability of HPs to effectively and confidently communicate with PWA. In their study, O'Halloran et al. (2011) found that HPs are key communications partners for PWA by facilitating communication access within the healthcare setting. They observed more effective communication skills for HPs who had an understanding of communication disabilities and associated strategies compared to those that had no or limited understanding and/or awareness. Similarly, the HPs included in this study also considered previous experiences and length of professional experience was advantageous when attempting to facilitate communication (O'Halloran et al., 2011).

1.1.5 Education and training of HPs and HP students

Simmons-Mackie et al. (2007) investigated improving the knowledge of HPs by providing education about aphasia and developing communication access goals. During the study, the HPs were encouraged to develop methods to facilitate communication with PWA in their respective healthcare facilities. HPs involved in the study reported that their jobs became less stressful and they had less fear surrounding interacting with PWA following the training (Simmons-Mackie et al., 2007). Further, HPs were also able to extrapolate the information learnt to assist with other patients who presented with communication difficulties. However, the study only targeted the communication environment of PWA and evaluated the effects of the program consistent with HP

self-reports. A study by Leach et al. (2010) found similar results in a sub acute rehabilitation setting. HPs were asked to complete a survey investigating goal-setting and the results identified that when PWA were actively involved in their rehabilitation, there was increased patient motivation, improved effectiveness of HP time and holistic management programs were accomplished. It was also revealed that many HPs reported communication difficulties presented a significant barrier to the involvement of PWA in planning for treatment (Leach et al., 2010). Similarly, numerous researchers (O'Halloran et al., 2007; Plowman, Hentz, & Ellis, 2012; Lalor & Cranfield, 2004) have demonstrated that individuals who are actively involved and engaged in their own rehabilitation achieve improved outcomes. However, despite the significant negative implications of aphasia on healthcare provision and HPs being identified as key communication partners for PWA, in Australia currently HPs and HP students, who are not SLPs, do not typically receive formal practical training for communicating with PWA.

Hill et al. (2010) conducted a review to investigate the use of standardised patients in clinical education settings compared to real time clinical situations. The researchers identified that health students from a variety of settings (e.g. medical, nursing, allied health) reported feeling increased stress, anxiety and a sense of being "ill-equipped" to manage basic communication requirements/adaptations during clinical placements (Hill et al., 2010). This was corroborated by Jagoe and Roseingrave (2011) who suggested that even SLP students, who are provided with specific academic knowledge and training, experience significant trepidation at the possibility of communicating with PWA. The study required students to write introspective letters to themselves at the commencement and completion of a practical learning module, involving student dyads visiting a person with aphasia. Thematic analysis was utilised to examine the data, however only eight of the 22 students allowed their letters to be used in the study. Of the eight, only six students provided both pre-post letters (Jagoe & Roseingrave, 2011). Thematic analysis of the letter content revealed that SLP students lacked assurance and felt unfit to communicate with PWA. It is likely that, based on the findings of this research and previous literature (Ash & Clayton, 2009; Bringle & Hatcher, 2009; Kagan et al., 2001; Hill et al., 2010; McGoran, 1978) that non-communication specific disciplines would experience comparable feelings or incidents. As a result, more research is needed to investigate the impact of CPT directly upon conversation interactions between HPs, HP students and PWA using more objective measures.

Training HPs and HP students is important as it provides an overall orientation to patient-centred care and its benefits. Patient-centred or client-centred care is widely recognised as a foundation principle of appropriate healthcare and there is evidence that increased patient involvement in rehabilitation leads to better outcomes (Finch et al., 2013).

1.1.6 CPT programs

Despite the evidence, at present there is a lack of research into the effectiveness of CPT in an Australian hospital context and knowledge of aphasia within the community is limited (Code et al., 2001). Several CPT programs include the *"Supported Conversation for Adults with Aphasia"* (SCA™) training program based in Canada (Kagan et al., 2001) and the Connect programs in the United Kingdom (now closed) (Connect - The Communication Disability Network, 2007, 2011, 2013). SCA™ is an approach that is based on revealing the inherent competence of PWA through skilled conversations partners (trained family members, significant others and volunteers) (Kagan et al., 2001; Kagan, Winckel, Black, Duchan, Simmons-Mackie, & Square, 2004). In the United Kingdom, Connect – The Communication Disability Network conducted a CPT program called *"Making Communication Access a Reality"* and *"Running a Communication Partner Scheme"* for HPs and volunteers working with PWA (Connect - The Communication Disability Network, 2007, 2011, 2013). The program provided education and strategies for use in conversation to optimise communication interactions and focussed on empowering PWA (the "experts") to provide the training. The proposed adaptation of the program is unique in that the PWA provide the training and feedback to the individuals being trained, as opposed to SLPs (Connect - The Communication Disability Network, 2007, 2011, 2013; Pound et al., 2007). The premise is that people who have previously suffered a stroke have first-hand experience identifying and overcoming communication difficulties.

According to the literature, PWA want to feel respected and be engaged in quality activities that promote a sense of belonging and contribution to the home/community environments in which they live (Dalemans, de Witte, Wade, & van den Heuvel, 2010). In consideration of the current proposed research, elements of the Connect programs and SCA™ were identified as being the most suitable to investigate the scope of training in a hospital context as they not only involved the training of volunteers (HPs/HP students) but also utilised PWA in a 'train the trainer' model. However, a limitation to the application of these Connect training programs is that they are designed for community settings in the United Kingdom. It is therefore unknown whether the benefits will translate to a hospital setting and extend to an Australian context. Additionally, only broad outcome measures have been used to evaluate the program and the application of the program to HP students has yet to be determined. Furthermore, research has predominately focussed on traditional face-to-face training but there is limited investigation into the effectiveness of CPT to be translated into a telepractice context; that is whether CPT can be delivered flexibly using telepractice technology.

1.1.7 Scope of telepractice for the implementation of CPT

The use of telepractice technology (the remote delivery of services) has been found to be effective in overcoming geographical barriers to the delivery of healthcare (Hill, Theodoros, Russell, Ward, & Wootton, 2009). The area of telepractice is quickly evolving within Australian healthcare settings (Sabesan & Kelly, 2015). Telepractice involves the remote delivery of services, expertise, skills training and information using technology systems over distance to many locations (Hill et al., 2009; Woolf et al., 2015); therefore minimising geographical, time, cultural and social barriers (Taylor et al., 2009). The many associated benefits for utilising telepractice technology have been widely cited to include accessibility, reduced costs (services, travel and facilities) and convenience (Griffiths, Lindenmeyer, Powell, Lowe, & Thorogood, 2006; Rietdijk, Togher, & Power, 2012; Rogante, Grigioni, Cordella, & Giacomozzi, 2010; Sabesan & Kelly, 2015; Woolf et al., 2015). Many services are therefore starting to make use of telepractice and develop policies around its use.

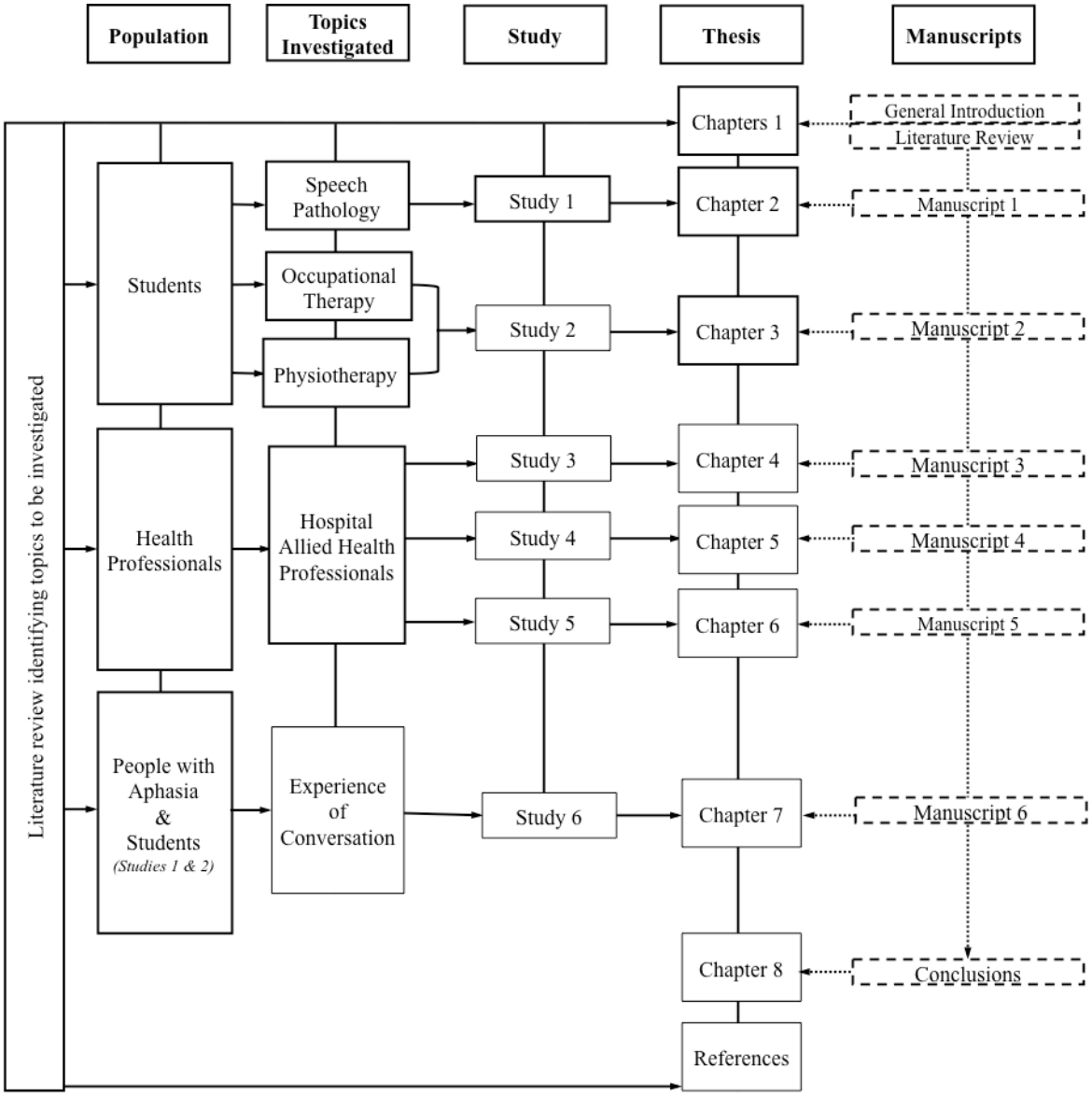
A study conducted by Moffatt and Eley (2010) examining the benefits of telepractice for rural HPs identified that by increasing access to healthcare services, staff were able to participate in up-skilling/professional development and it contributed to improved service delivery and retention of rural HPs. A systematic review investigating the application of using telepractice, within the traumatic brain injury population, to disseminate information and provide training to family members found that it could be an effective method by which to deliver relevant training and information in an accessible and adaptable format (Rietdijk et al., 2012). Telepractice services provide an effective and accessible means of providing healthcare services and training options to not only underserviced or rural/remote areas, but to metropolitan centres as they afford flexibility for participation (Currell, Urquhart, Wainwright, & Lewis, 2000; Jennett et al., 2003). Telepractice can be either synchronous (real time) or asynchronous ("store-and-forward"). Although research is being conducted into the application of telepractice technologies within healthcare (Akaike, 2011; Armfield, Bradford, & Bradford, 2015; Brown, 2011; Cherney, Kaye, & Hitch, 2011; Hall, Boisvert, & Steele, 2013; Hill, 2016; Sabesan & Kell, 2015), there is currently limited research into the use of telepractice technologies to provide real time practical training in the area of CPT for volunteers, HPs, HP students and PWA (Cherney et al., 2011; Mashima & Doarn, 2009). The current CPT program delivered via telepractice provides a two-fold training approach, whereby the target group (HPs) receive explicit training and the practical facilitators (PWA) also receive ongoing practice of learned skills across different contexts and professions.

1.1.8 Summary

Ultimately, effective communication between PWA, HPs and HP students is fundamental for preserving patient safety, optimal care and dynamic participation through proficient communication interactions (National Institute for Health & Care Excellence, 2013; World Health Organisation, 2008). Given the paucity of research into CPT in Australia and the potential significant clinical benefits of CPT, it is important to explore the effectiveness of communication training, delivered face-to-face and via telepractice, in a healthcare context, to reduce communication barriers, facilitate communicative interactions and enhance access. The subsequent thesis chapters will provide data to add to the current evidence-based discussion around CPT and the need for training due to the impact under preparedness, of HPs and HP students, has on holistic healthcare intervention, education and management.

1.2 "The Current Thesis": Aims, Hypotheses and Significance

This thesis is presented in a "thesis entirely comprised of publications" style. This was chosen due to the aims and nature of the study, as well as the opportunity for timely dissemination and clinical application of the findings. The thesis consists of eight chapters including: the current introductory overview and literature review (Chapter 1), five published journal articles (Chapters 2-5, 7) and one journal article under review (chapter 6) derived from a series of six studies and a final concluding chapter (Chapter 8). The overall outline of the thesis is as follows:


Population
Topics Investigated
Study
Thesis
Manuscripts
Literature review identifying topics to be investigated
Students
Health Professionals
People with Aphasia & Students
(Studies 1 & 2)
Speech Pathology
Occupational Therapy
Physiotherapy
Hospital Allied Health Professionals
Experience of Conversation
Study 1
Study 2
Study 3
Study 4
Study 5
Study 6
Chapters 1
Chapter 2
Chapter 3
Chapter 4
Chapter 5
Chapter 6
Chapter 7
Chapter 8
References
General Introduction
Literature Review
Manuscript 1
Manuscript 2
Manuscript 3
Manuscript 4
Manuscript 5
Manuscript 6
Conclusions

1.2.1 Identified area for investigation

As previously highlighted, aphasia is an acquired language disorder that can present a significant barrier to an individual's involvement in everyday life and healthcare decisions. SLPs are viewed as the 'experts' in the field of communication however; many SLP students do not receive practical training in techniques to communicate with PWA until they encounter PWA during clinical education placements or employment. In Australia, HPs other than SLPs typically do not receive formal practical training in communicating with PWA and consequently lack the skills and confidence to effectively converse in such situations. For example, in a hospital setting members of the multidisciplinary team all provide individualised therapy to the patient requiring treatment. As these other disciplines have not received 'specialised' communication training as part of their course, it is likely that these interactions could result in significant stress, anxiety and frustration. In terms of communication accessibility within a healthcare setting, HPs are one of the key communication partners for PWA. It is therefore necessary to investigate the value of intervention programs designed to educate HPs and HP students in effective communication techniques for PWA.

1.2.2 Aims and hypotheses

The overall aim of this thesis is to investigate the impact of implementing CPT on PWA, HPs and HP students. Two modalities for delivery were employed to assess whether there was a difference in the effectiveness and application CPT. This was done via face-to-face training and synchronous telepractice using a real time video teleconferencing system. It was postulated that PWA would benefit from communicating with trained HP partners, due to supportive engagement and more fluid transaction of thoughts, ideas and information in a conversation. Similarly, it was anticipated that HPs and HP students would experience an increase in confidence and knowledge for interacting with individuals who have a communication disability, and support their clinical practice. The specific research aims and hypotheses are detailed below:

Aim 1: To investigate the effects of CPT delivered face-to-face on the confidence and knowledge of strategies in HPs and HP students.

Hypothesis 1: *It is hypothesised that CPT will improve the confidence and knowledge of HPs and HP students when communicating with PWA.*

Aim 2: To investigate the effects of CPT delivered via synchronous telepractice technology compared to the traditional face-to-face delivery method.

Hypothesis 2: *It is hypothesised that the flexible delivery of the CPT program using synchronous telepractice technology will result in similar increases in confidence and knowledge of communication strategies for the HPs as the traditional face-to-face training.*

1.2.3 Study specific aims and hypothesis

The specific research aims and hypotheses of the six studies included in this thesis are detailed below:

The following aims and hypotheses will be addressed in Chapter 2.

Aims: To (1) examine the effects of CPT on the communication behaviours of SLP students during conversations with PWA and (2) determine whether there was a difference between the groups at a global participation and support level then at a more microscopic level of conversational analysis.

Hypothesis 1: *It is hypothesised that the CPT trained group would obtain higher scores on communication participation and support measures, display greater use of conversation strategies, and experience fewer conversation breakdowns.*

Hypothesis 2: *It is hypothesised that if a conversation breakdown occurred, the trained group would use more successful repair strategies than the untrained group.*

The following aim and hypothesis will be addressed in Chapter 3.

Aim: To investigate the effects of a CPT program for PWA, regarding levels of confidence and knowledge of strategies, on a cohort of OT and PT students.

Hypothesis: *It is hypothesised that OT and PT students would demonstrate improved knowledge and confidence for communicating with PWA after receiving the CPT intervention.*

The following aims and hypotheses will be addressed in Chapters 4 and 5.

Aims: To investigate (1) HPs' knowledge of communication strategies and confidence for communicating with PWA (2) determine if there is a comparative difference between SLPs and non SLP HPs when interacting with PWA.

Hypothesis 1: *It is hypothesised that HPs would demonstrate improved knowledge and greater confidence after completing the CPT education program.*

Hypothesis 2: *It is hypothesised that SLPs, through their university coursework and professional career, would have learned strategies for interacting with PWA and demonstrate higher levels of confidence and knowledge without completing the CPT education program, compared to non SLP HPs.*

The following aim and hypothesis will be addressed in Chapter 6.

Aim: To compare the effectiveness of using synchronous telepractice technology to deliver CPT with PWA for training HPs.

Hypothesis: *It is hypothesised that both the face-to-face or telepractice groups receiving a CPT training program would result in improved confidence and knowledge of effective communication strategies, but that investigators were uncertain whether either approach would be superior to the other.*

The following aims will be addressed in Chapter 7.

Aims: To gain understanding of the experiences of (1) PWA as volunteer providers of CPT to HPs and HP students and (2) HP students as recipients of CPT, including their perceptions about benefits of and potential improvements to the program.

1.2.4 Significance of the current thesis

In the pursuit of research translation into clinical practice, this current thesis aims to build upon and provide evidence to support the implementation of a CPT program, as standard training to all HPs and HP students working within a healthcare setting. It will also explore whether the mode of CPT provision (i.e. delivered face-to-face or via synchronous telepractice), has an impact on perceived benefit or educational outcomes and practical application. This novel approach, of utilising PWA in a 'train the trainer' model, in addition to the communication strategies acquired by HPs and HP students being incorporated into routine clinical practice, aims to assist PWA to overcome the barriers aphasia creates and improve consumer and provider outcomes.

1.2.5 HP and HP student participants

The HPs included in these studies were all current employees of the PAH. The HP students were all currently studying at The University of Queensland (UQ) in the School of Health and Rehabilitation Sciences. Their involvement in the research was strictly voluntary, with nil compensation or additional credit awarded. All the individuals were aged >18 years and they had adequate English skills to consent and participate in the CPT.

1.2.6 PWA participants

The PWA included in the studies were all current or previous members of the Princess Alexandra Hospital's (PAH) weekly aphasia group, run by the SLP department. All the individuals were aged >18 years and their aphasia was the result of a stroke (as diagnosed by an SLP). The PWA varied in the type and severity of aphasia they presented with however, they had adequate cognition and English skills to consent and participate in the CPT program with nil other neurological conditions.

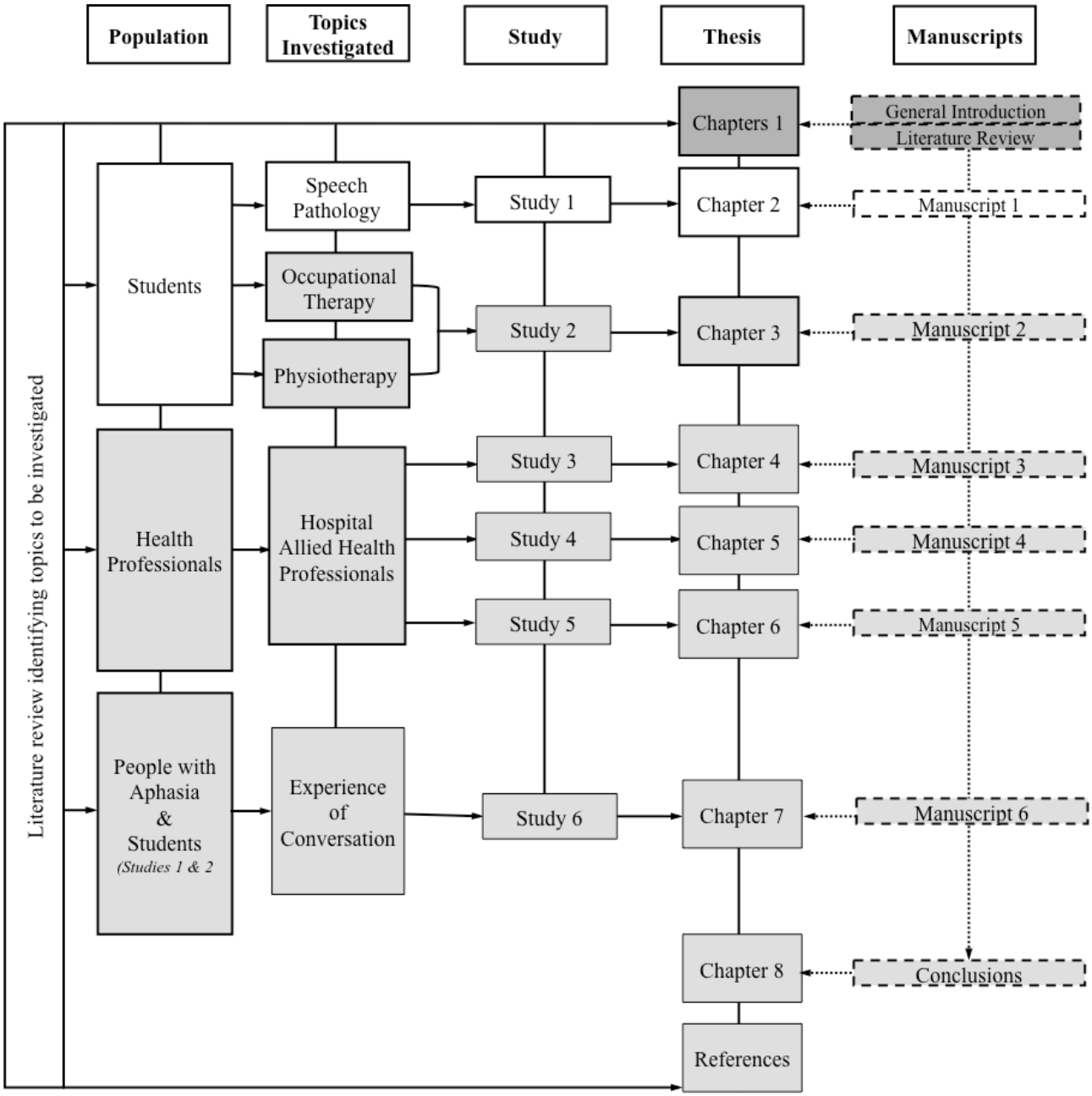
CHAPTER 2

Does communication partner training improve the conversation skills of speech-language pathology students when interacting with people with aphasia?

Chapter 1 provided an introduction to aphasia, supported conversation techniques and current healthcare management relating to both HPs and educational training. It introduced the role of HPs and HP students in supporting PWA accessing and engaging in healthcare, as well as associated challenges within the current models of practice and environmental settings. Through review of the literature, CPT has been identified as an efficacious program to support the skills of health providers and promote engagement of PWA. However, there is relative paucity of literature investigating the use of CPT, which utilises PWA as trainers, in a hospital setting. Moreover, the validity of using synchronous telepractice to deliver CPT has not been established.

Chapter 2 presents a two parallel arm randomised controlled trial, which investigated the effects of CPT on the communication behaviours of a cohort of 38 SLP students when communicating with PWA. It is important to investigate SLP students' ability to successfully communicate with PWA following participation in routine academic coursework, as on graduation they are considered the 'experts' in communication. Conversations between PWA and SLP students were transcribed and scored on communication participation and support measures to ascertain if there were differences between a global participation and support level compared to a microscopic level. The chapter will highlight if there is justification for the development and evaluation of a tailored practical skills program that could be provided as an adjunct to existing theoretically based academic courses. The findings from the study will also generate further investigation into other health disciplines, to elucidate preparedness and level of skills to successfully engage with PWA in a professional capacity, by disciplines not considered to have specialised communication training.

The following manuscript entitled "Does communication partner training improve the conversation skills of speech-language pathology students when interacting with people with aphasia?" was written in collaboration with Dr Emma Finch (lead author) and was published in the *Journal of Communication Disorders*, 2017 *(*Vol. 68, pages 1-9). The PhD candidate made a substantial contribution to this manuscript, in addition to the study being conducted as part of this series of research. This manuscript is inserted as published, with the exception of formatting (for details, please refer page viii). Abbreviations are not re-defined in this chapter (please refer page xxix). All references have been combined and are presented in a single reference list at the end of this thesis (pages 124-140).



Does communication partner training improve the conversation skills of speech-language pathology students when interacting with people with aphasia?

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2.1 Abstract

Background: Aphasia is a common consequence of stroke. Despite receiving specialised training in communication, SLP students may lack confidence when communicating with PWA. This paper reports data from secondary outcome measures from a randomised control trial.

Aim: The aim of the current study was to examine the effects of CPT on the communication skills of SLP students during conversations with PWA.

Method: 38 SLP students were randomly allocated to trained and untrained groups. The first group received a lecture about communication strategies for communicating with PWA then participated in a conversation with PWA (trained group), while the second group of students participated in a conversation with the PWA without receiving the lecture (untrained group). The conversations between the groups were analysed according to the Measure of Skill in Supported Conversation (MSC) scales, Measure of Participation in Conversation (MPC) scales, types of strategies used in conversation, and the occurrence and repair of conversation breakdowns.

Results: The trained group received significantly higher MSC Revealing Competence scores, used significantly more props, and introduced significantly more new ideas into the conversation than the untrained group. The trained group also used more gesture and writing to facilitate the conversation, however, the difference was not significant. There was no significant difference between the groups according to MSC Acknowledging Competence scores, MPC Interaction or Transaction scores, or in the number of interruptions, minor or major conversation breakdowns, or in the success of strategies initiated to repair the conversation breakdowns.

Conclusion: SLP students may benefit from participation in CPT programs.

2.2 Introduction

Aphasia, an acquired language disorder, is a common consequence of stroke (Pedersen et al., 1995). Given that the management of communication disorders is core practice in SLP, during their university training SLP students are required to rapidly develop effective interpersonal and clinical skills for interacting with PWA. Despite receiving specialised training in communication, research has demonstrated that SLP students can lack confidence and experience anxiety when communicating with PWA. Jagoe and Roseingrave (2011) found that SLP students were highly apprehensive at the prospect of communicating with PWA during a service-learning module involving pairs of students visiting a PWA. More recently Finch et al. (2013) found that a cohort of 49 SLP students reported low levels of confidence and limited knowledge of strategies for communicating effectively with PWA. The combined effect of a lack of confidence and strategies for practically applying communication skills can be magnified by an unfamiliar clinical environment, potentially creating anxiety for students and detrimentally shifting the focus away from learning valuable clinical reasoning skills (Finch et al., 2013).

One potential approach to improve the confidence and knowledge of strategies for communicating with PWA is through CPT. CPT has been defined as: "An intervention directed at people other than the person with aphasia with the intent of improving the language, communication, participation, and/or wellbeing of the person with aphasia" (Simmons-Macki et al., 2010). A systematic review by Simmons-Mackie et al. (2010) revealed that CPT can effectively improve the communication activities and/or participation of communication partners in conversations with PWA. Of the 31 studies included in the systematic review, 25 involved caregivers or family members that is familiar people, as communication partners. However, in everyday life, conversations are not usually restricted to only familiar conversation partners. This is particularly relevant for PWA who may interact regularly with a variety of HPs as part of their stroke management. Accordingly, over the last few years, there has been a move towards investigating the effects of CPT or other supported communication programs with unfamiliar conversation partners, such as HPs and HP students (Cameron et al., 2015; Horton, Lane, & Shiggins, 2016b; Wilkinson, Sheldrick, O'Halloran, & Davenport, 2013).

In terms of research investigating the effects of CPT with unfamiliar communication partners, a randomised controlled trial by Legg, Young, and Bryer (2005) found that CPT improved the communication skills of sixth-year medical students when obtaining case histories from PWA. Specifically, the CPT trained students' abilities significantly improved with respect to exploring the patient's issues, structuring the case history session, developing rapport, and acknowledging and revealing the communicative competence of the patient (Legg et al., 2005).

A more recent study by Saldert, Forsgren, and Hartelius (2016) examined the effects of a lecture and/or interactive workshop on medical students' knowledge about communicating with people with speech and language disorders. All students received a lecture about speech and language disorders, with a subset also participating in a workshop. The students' self-ratings of confidence in knowledge about communicating with people with speech and language disorders were compared with SLPs ratings of their ability to select appropriate communication strategies. The lecture and workshop increased the students' confidence in their own knowledge about communication disorders, however; only workshop participants displayed a statistically significant increase in their ability to select appropriate communication strategies. Interestingly, students' self-rated confidence and the SPs' ratings of their ability to select appropriate communication strategies were not significantly correlated (Saldert et al., 2016).

In terms of students from other health disciplines, Cameron et al. (2015) found that CPT, involving a theoretical lecture about aphasia followed by the opportunity to practise the communication skills in a supported, non-graded environment, significantly improved the confidence and knowledge of effective communication skills of OT and PT students. Whether or not this then equated to changes in communication strategy use during conversations with PWA is unknown. Increased confidence when communicating with PWA following CPT programs has also been reported with SLP students (Finch et al., 2017a; Jagoe & Roseingrave, 2011; Wilkinson et al., 2013). Students in a study by Jagoe and Roseingrave (2011) reported heightened confidence and lessened anxiety after conversing with PWA during a reflective letter-writing task as part of a service-learning module. A participatory research approach by McMenamin, Tierney, and MacFarlane (2015b), involving PWA and other key stakeholders (notably SLPs and students) as both research participants and 'co-researchers', found that students and PWA reported improved confidence levels and that the non-stressful, non-clinical environment facilitated conversations. The CPT program involved pairs of third year SLP students visiting PWA 10 times over 14 weeks (McMenamin et al., 2015b).

As communication support training programs should ideally be evaluated in an observational context (Parry & Brown, 2009), there is a need to investigate the effects of CPT on the interactions of SLP students with PWA to examine whether CPT programs produce a beneficial change in conversation behaviours. While previous research has demonstrated that CPT can improve students' and HPs' confidence and knowledge of effective communication strategies for communicating with PWA (Cameron et al., 2015; Finch et al., 2017a; Jagoe & Roseingrave, 2011; Wilkinson et al., 2013), we do not know whether this also translates into more effective communication behaviours during conversation. Therefore, the aim of the current study was to address this knowledge gap by comparing the communication behaviours

of students trained in CPT with untrained students during conversations with the same PWA. Specifically, the aim of the present study examines the effects of CPT on the communication behaviours of SLP students during conversations with PWA. The current study sought to determine whether there was a difference between the groups at a global participation and support level and then at a more microscopic level of conversational analysis. It was hypothesised that the CPT trained group would obtain higher scores on communication participation and support measures, display greater use of conversation strategies, and experience fewer conversation breakdowns. Further, it was hypothesised that if a conversation breakdown occurred, the trained group would use more successful repair strategies than the untrained group.

2.3 Method

Ethical clearance was obtained from the relevant hospital and university ethics committees.

2.3.1 Design

To evaluate the effects of CPT on conversations between the SLP students and PWA, a two parallel arm randomised controlled trial with students randomly allocated to CPT and untrained groups design was employed (Australian New Zealand Clinical Trials Registry Trial ID: 12611000833965) (Finch et al., 2017a). The allocation ratio was 1:1. This paper reports data from secondary outcome measures.

2.3.2 Participants

Demographic information by group is presented in Table 2.3.2.1. The SLP students comprised 38 students (37 female, 1 male). The students were currently completing the second year (n = 25) of an undergraduate SLP program or the first year of a graduate entry masters SLP program (n = 13). At the time of the current study, the undergraduate students had completed 24 units of a 64 unit course, while the graduate entry masters students had completed 16 units of a 40 unit course. Students in both groups were specifically selected at this stage of their educational program, as they had received university lectures about aphasia but had not had substantial clinical contact with PWA. Students from other stages of the university SLP program (such as students who had not received lectures about aphasia as part of their coursework or those who had participated in clinical placements with PWA) were not included. Only seven students in total across the two groups reported contact with PWA prior to the study. These limited interactions included one day of work experience (n = 2), reception work (n = 1), volunteer work (n = 2), a relative outside of the participant's immediate family (n = 1), and a friend (n = 1). There were no statistically significant differences between the groups on any of the demographic variables, including contact with PWA or stage of their university SLP program (all ps > .05).

Using a computer-generated random number allocation system (SMM), the SLP students were allocated to two groups. Group allocation was concealed in individual numbered opaque envelopes (SMM, AC, EF) that were opened by participants and recorded by a member of the researcher team (AC) at the commencement of the training day. The first group of students received a lecture about communication strategies for communicating effectively with PWA and then participated in a conversation with the PWA (trained group), while the second group of students participated in a conversation with the PWA without receiving the lecture about communication strategies (untrained group). No participants were lost or excluded following randomisation.

The PWA were recruited from an aphasia outpatient social group at a single, metropolitan hospital in Australia. In total, 10 PWA (5 males, 5 females) participated in the study. The mean age was 61 years (SD = 10) and the mean time post-stroke was 48 months (SD = 15). All participants were diagnosed with aphasia by an SLP prior to their inclusion in the study. The severity of the aphasia of the participants ranged from mild to moderate-severe. As the PWA were not receiving SLP intervention at the time of the study, up to date specific assessment data was not available. The only other inclusion criteria included possessing adequate cognitive capacity and time availability to participate in both the training program and the conversations with the students.

2.3.3 Training protocol

The intervention in the randomised control trial has been described in more detail in Finch et al. (2017b). The CPT was conducted over a single morning in the SLP clinic rooms at UQ. Both the training and the measurement of outcomes occurred during a single morning. The trained students received the lecture at the same time that the untrained group participated in the conversations with the PWA. At the time of the conversations the untrained group was unaware that the trained students were receiving a lecture about communication strategies. The PWA were also not aware that half of the students would receive a lecture about communication strategies prior to participating in the conversations. The untrained student group was informed about the lecture after their conversations with the PWA. The trained and untrained students were never mixed together for the conversations.

The lecture about strategies to communicate effectively with PWA was based on the training program developed by Connect - The Communication Disability Network in the United Kingdom (2007, 2011, 2013) and SCA™ (Kagan et al., 2001). The lecture lasted for approximately 20 minutes and was delivered face-to-face by a SLP using Microsoft PowerPoint slides and video examples. The lecture included information about what is a conversation, aphasia, impact of aphasia on conversations, and strategies to communicate effectively with PWA.

Prior to commencement of the study, all PWA participated in a training program (12 hours over six weeks) about techniques to assist people to communicate with PWA and communication

strategies, based on Connect's *"Running A Conversation Partner Scheme"* program (Connect - The Communication Disability Network, 2011). The purpose of the training was to empower the PWA to share their knowledge and skills with other people to help improve the communicative environment for PWA. The training program included information about aphasia, conversation, impact of aphasia on conversations, supported conversation, effective communication techniques, communicative competence, conversation breakdown repair, and giving feedback about conversation performance (Connect - The Communication Disability Network, 2011). The training program also included having a conversation with a HP and providing feedback to the HP about his or her communication skills. The purpose of this second stage was for the PWA to gain practical experience in giving feedback about conversation performance.

2.3.4 Conversation protocol

Within each group, the students were randomly divided into groups of 2-3 students for the conversations to minimise any potential anxiety. Within each study group (Trained or Untrained) there was one subgroup with three students. All other student groups had two students per group. The students participated in one conversation only with the PWA. The PWA were divided into groups of 1-2 people based on their aphasia severity such that individuals with more severe aphasia were partnered with individuals with milder aphasia. Each conversation was therefore a group conversation with 2-3 students conversing with 1-2 PWA. In conversations where there were two PWA, each student was expected to communicate with both PWA. The conversations occurred in closed clinic rooms with Closed Circuit Television (CCTV) recording such that the students who were not part of the conversation were unable to observe the conversation that was occurring. The conversations were only observed by members of the research team via the CCTV set-up in a control room. The students were instructed to have a general conversation with the PWA. No requests were made for specific egocentric information or topic choices. The students and PWA were randomly allocated to clinic rooms so that the students were unable to choose the person with aphasia with which they conversed. As per Cunningham and Ward (2003), 15 min was selected as the target length of conversation to provide ample time for conversation. During the conversations, the students and PWA were provided with props to stimulate conversation, including newspapers and maps. All conversations were videorecorded for subsequent transcription and analysis. At the end of each conversation, the PWA provided verbal and visual feedback to the students on an aphasia-friendly form about their communication techniques and strategies used via the Connect feedback form from the Conversation Partner Toolkit, Tool 1.16 (Connect - The Communication Disability Network, 2007). The feedback form provided some questions in an aphasia friendly format for an informal discussion about the conversation experience (e.g., Was the conversation comfortable and relaxed? Were key words written down? Overall how was the conversation for

you?) (Connect - The Communication Disability Network, 2007). The questions positively reinforced strategies used by the students and highlighted strategies, which could be used in the future. The feedback was informal and provided, as part of the learning experience so was not analysed. Following the conversation, the students in the untrained group were offered the opportunity to attend the lecture about communication strategies.

2.3.5 Measures

Video data from the conversations was transcribed and jointly analysed by a group of three-trained research assistants blinded to group allocation. As the research assistants analysed the videos together using a group consensus approach rather than completing the ratings independently, no reliability estimates were available.

The transcribed conversations were analysed initially at a global level using the MSC and MPC (Kagan et al., 2004). The MSC rates the skill of the conversation partner on two scales: Acknowledging Competence and Revealing Competence. The Acknowledging Competence score includes ensuring that the conversation is appropriate to the context and that the communication partner is sensitive to the PWA. The Revealing Competence score includes ensuring that the PWA understands the conversation and has a method of participating in the conversation, and verifying what the PWA communicated. The MPC rates the participation of the PWA according to the PWA's social connection with the communication partner (Interaction score) and the ability of the PWA to exchange information (Transaction score). The scales range from 0 (totally inadequate) to 4 (outstanding) with 0.5 intermediate scoring acceptable. The MSC and MPC have been found to perform highly in terms of reliability and validity (Kagan et al., 2004). It is important to note that the scales were designed to be complementary measures used as set to describe the conversation dyad between the conversation partner and the PWA, and that due to the collaborative nature of conversation, the measures are inherently linked (Kagan et al., 2004). For more detail about the scales, please refer to Kagan et al. (2004).

Kagan et al. (2004) cautioned that conversation should not be evaluated solely at a global level and that more detailed analyses in the form of conversation, pragmatics, or cognitive neuropsychological analyses should also be conducted. Therefore, a second level of analysis was performed using conversational analysis of the transcriptions. During the conversational analysis, multiple aspects of conversation were analysed including, non-verbal communicative behaviour, conversation breakdowns, introduction of new ideas into the conversation, and interruptions (Cunningham & Ward, 2003). As per Cunningham and Ward (2003), non-verbal communicative behaviours were classified into the following groups: use of props, use of gesture, writing, drawing, touch, and other non-verbal behaviours. The frequency with which behaviours occurred under each category was recorded for subsequent analysis. The identification of non-verbal communicative

behaviours using the approach described by Cunningham and Ward (2003) has been reported by the authors to have good inter-rater reliability based upon intraclass correlation coefficients. Conversation breakdowns (i.e., blockages to the flow of the conversation) were classified as either major or minor. Unsuccessful conversation repairs after a conversation breakdown were further analysed according to whether the repair strategy was successful or unsuccessful (Cunningham & Ward, 2003). Intra-rater reliability for the analysis of conversation outlined by Cunningham and Ward (2003) has been described by the authors as variable, with intraclass correlation coefficients ranging from poor to good for the 14 categories (Cunningham & Ward, 2003).

2.3.6 Data analysis

Data analysis occurred by original assigned groups. Following transcription (both verbal and non-verbal), the data were analysed by the research assistants according to the MSC, MPC and conversational analysis features outlined above. Both the students and the PWA were analysed with scores assigned to each individual separately. The research assistants were provided with direct instruction and training regarding data analysis by a member of the research team (EF). This occurred during an initial training session over one afternoon. The research assistants were blinded and unaware of the conversation conditions. They then checked back with the team member (EF) during the data analysis process. Once the analyses were completed, the research assistants discussed their analysis with a member of the research team (EF) for further checking. Data analysis was conducted using Microsoft Excel 2013 and SPSS Version 22. Due to the skewed nature of some of the data, non-parametric statistical analyses were employed. A series of Mann-Whitney U Tests were used to analyse the difference between the trained and untrained students groups according to MSC Acknowledging Competence and Revealing Competence scores and the frequency of non-verbal behaviours, communication breakdowns and the success of repairs, number of new topics introduced, and number of interruptions. Wilcoxon Signed Rank Tests were used to analyse the difference in conversation participation by the PWA with the trained student group compared to the untrained student groups according to MPC Interaction and Transaction scores. Correlations using Spearman's rank order correlation were used to determine whether there were significant correlations between any of the variables for the students and PWA separately. A significance value of .01 was used for all analyses.

2.4 Results

The trained group received significantly higher MSC Revealing Competence scores, used significantly more props during the conversations, and introduced significantly more new ideas into the conversation than the untrained group (See Table 2.4.1 and Figure 2.4.1). The trained group also used more gesture and writing to facilitate the conversation, however, the differences were not significant. The props used during the conversations included newspapers, pens and

paper for writing and drawing, emotion pictures, and photographs. Additional props (such as maps and calendars) were also present in the rooms. The conversation topics included: weather, plans for the weekend, stroke, rehabilitation, aphasia, mobile phones, the SLP program, hobbies, sport, animals, family members, and country of origin. There was no significant difference between the groups according to MSC Acknowledging Competence scores, the number of interruptions, or number of minor or major conversation breakdowns. Particularly in the case of interruptions, both groups were good at not interrupting so there was minimal room for a difference between the groups. There was also no significant difference between the groups with respect to the success of strategies initiated to repair the conversation breakdowns (See Table 2.4.1). No students in either group used drawing or touch. There was no significant difference in the participation of PWA in conversations with the trained or untrained groups according MPC Interaction or Transaction scores (both $p > .01$; See Table 2.4.2).

For the students, there was a statically significant large correlation between MSC Revealing Competence and MSC Acknowledging Competence scores ($rho = .584$, $p < .001$; See Table 2.4.3). For the PWA, there was a statistically significant large correlation between MPC Interaction and MPC Transaction scores ($rho = .644$, $p < .001$; See Table 2.4.4). The introduction of new ideas into the conversation was significantly correlated with MSC Revealing Competence ($rho = .702$, $p < .001$) and MPC Transaction ($rho = .509$, $p = .003$) scores (See Tables 1.4 and 1.5). The use of gesture as a strategy was significantly correlated with MSC Acknowledging Competence ($rho = .491$, $p = .002$), and MSC Revealing Competence ($rho = .742$, $p < .001$).

2.5 Discussion

The aim of the current study was to examine the effects of CPT on the communication skills of SLP students during conversations with PWA. Overall, we found that the students who participated in CPT prior to conversations with PWA received significantly higher MSC Revealing Competence scores, used significantly more props during conversation, and introduced significantly more ideas into the conversation compared to untrained students. There were no significant differences between the groups on MSC Acknowledging Competence score, MPC Transaction or Interaction scores, number of interruptions, number of minor or major conversation breakdowns, or the success of strategies initiated to repair the conversation breakdowns.

The results suggest that training was effective in improving interactions with PWA as indicated by the MSC Revealing Competence scores. The MSC Revealing Competence score is based on areas such as ensuring that the person with aphasia understands the conversation, verifying what the person with aphasia has communicated, and ensuring that the person with

aphasia has a method of participating in the conversation (Kagan et al., 2004). These were all topics addressed during the lecture component of the training program. The higher MSC Revealing Competence scores by the trained students compared to the untrained students suggests that the trained students were successfully applying the information and strategies gained during the lecture to real-life conversations with PWA.

Interestingly, in the present study, contrary to MSC Revealing Competence, there was no significant difference between the groups in terms of MSC Acknowledging Competence scores. This scale involves ensuring that conversation is appropriate to the context and that the communication partner is sensitive to the person with aphasia (Kagan et al., 2004). The lack of a difference between the two groups on this scale may have reflected the fact that all of the students had received theoretical information about aphasia as part of their routine coursework prior to the study, and were therefore all sensitive to the PWA. Additionally, given that the context of the conversation was somewhat contrived for the purposes of the training program, it may have been difficult for the students to improve their competence in tailoring the conversation to be more appropriate to the context.

The CPT did not significantly improve the participation of PWA in conversations with the trained students compared to the untrained students according to MPC Interaction and Transaction scores. The MPC Interaction score reflected the social connection between the person with aphasia and their communication partner, while the MPC Transaction score reflected the ability of the PWA to exchange information (Kagan et al., 2004). It must be noted that the training program did not specifically target the person with aphasia; instead training was provided to the SLP students. As a result, it was unlikely that changes would occur in MPS Transaction scores, which largely reflect the person with aphasia's communication skills. In contrast with the MPC Transaction scores, the MPC Interaction scores examined social connections and thus had more potential to be influenced by the skills and confidence of the students. That said, a significant difference was not observed when the PWA were conversing with trained students compared to the untrained students.

The trained students introduced significantly more new ideas into the conversations than the untrained students. It is possible that after receiving CPT the trained students felt more relaxed and more confident (as per Jagoe and Roseingrave (2011) and Wilkinson et al. (2013)), and therefore, were more capable of focusing on the actual conversation and keeping the ideas flowing than the untrained students. This finding may also reflect that the students had learnt strategies for introducing new topics, or had benefitted from examples of conversation topics role modelled in the training. This is reflected in the presence of a significant correlation between the

frequent introduction of new ideas and higher MSC Acknowledging Competence and MPC Transaction scores.

The trained students in the present study used more strategies to facilitate communication than the untrained students, however, the difference between the groups was only significant for the number of props used. This occurred regardless of all the measured strategies being included in the formal lecture. The findings of the present study contrast with those of Cunningham and Ward (2003) who found that training dyads (a PWA and a relative/friend) produced a non-significant increase in the use of gesture in 3 out of 4 trained dyads. The difference between the groups in the present study may have reflected the content of the formal lecture, the length of the training and/or frequency, as Cunningham and Ward (2003) involved weekly 90 minute sessions for five weeks while the current study involved only a single, 20 minute morning training session, that may not have been long enough to explore all issues in depth.

Previous research has revealed that CPT with healthcare students can lead to self-reported increases in confidence communicating with PWA and increased recall of strategies for communicating effectively with PWA (Cameron et al., 2015; Jagoe & Roseingrave, 2011; McMenamin et al., 2015b). The present study extended this body of research by revealing that participation in a CPT program can encourage SLP students to use effective communication behaviours during conversation with PWA. Specifically, students who participated in CPT prior to conversations with PWA received significantly higher MSC Revealing Competence scores, used significantly more props during conversation, and introduced significantly more ideas into the conversation compared to untrained students. It is possible that these behaviours may have reflected an increased knowledge of communication strategies (stemming from the lecture component of the CPT) and a generalised higher sense of self-confidence about communicating with PWA than experienced by the untrained students who did not receive the CPT lecture before the conversation. It is interesting, however, that there was not a uniformly greater use of all strategies by the trained group compared to the untrained group.

In the present study, the props used during the conversations included newspapers, pens and paper for writing and drawing, emotion pictures, and photographs. The conversation topics included weather, plans for the weekend, stroke, rehabilitation, aphasia, mobile phones, the SLP program, hobbies, sport, animals, family members, and country of origin. While it is possible that the students in the trained group just happened to select topics of conversation that lend themselves to prop use, we think that it is more likely that the increased use of props by the trained group reflected the lecture content, which discussed the use of props such as those used by the students. It is interesting to note, however, that additional props (such as maps and calendars) were also present in the rooms, but were unused by both groups despite some of the conversation

topics lending themselves to these props. It is possible that the students and PWA thought that the props were not required or that they simple forgot the props were present in the room.

Interestingly, in the present study there was no significant difference between the groups according to the number of interruptions or conversation breakdowns or in the success of strategies used to repair the conversation breakdowns. Cunningham and Ward (2003) also found no significant difference in the proportion of successful repair sequences. The results of the present study suggested that while the training program led into an increase in the use of strategies to facilitate communication, a similar carryover effect was not observed in terms of conversation breakdowns or repairs. We note, however, that in the case of interruptions, both groups were good at not interrupting so there was minimal room for a difference between the groups.

Correlation analyses revealed that there was a statically significant large correlation between MSC Revealing Competence and MSC Acknowledging Competence scores for the students, and a statistically significant large correlation between MPC Interaction and MPC Transaction scores for the PWA. These two correlations are not surprising as Kagan et al. (2004) designed the scales to reflect the interactions between the conversation partner and the PWA. Given that conversation occurs as a partnership between two or more people, the scales were designed to be complementary measures used together to describe the conversation dyad (Kagan et al., 2004). The correlation between the introduction of new ideas and MPC Transaction scores for the PWA (which reflected the ability of the PWA to exchange information) and MSC Revealing Competence scores for the students (which reflected the ability of the students to encourage the PWA to understand and express information, and verify information) suggested that there may have been a link between the behaviours of the PWA during the conversation and the skills of the students, and vice versa. However, as this was not a uniform finding across all measures and all behaviours further exploration of this observation is required in future research. It is also possible that some of the students' behaviours may have depended more on the characteristics of their PWA partner than on the CPT training.

2.5.1 Limitations and future directions

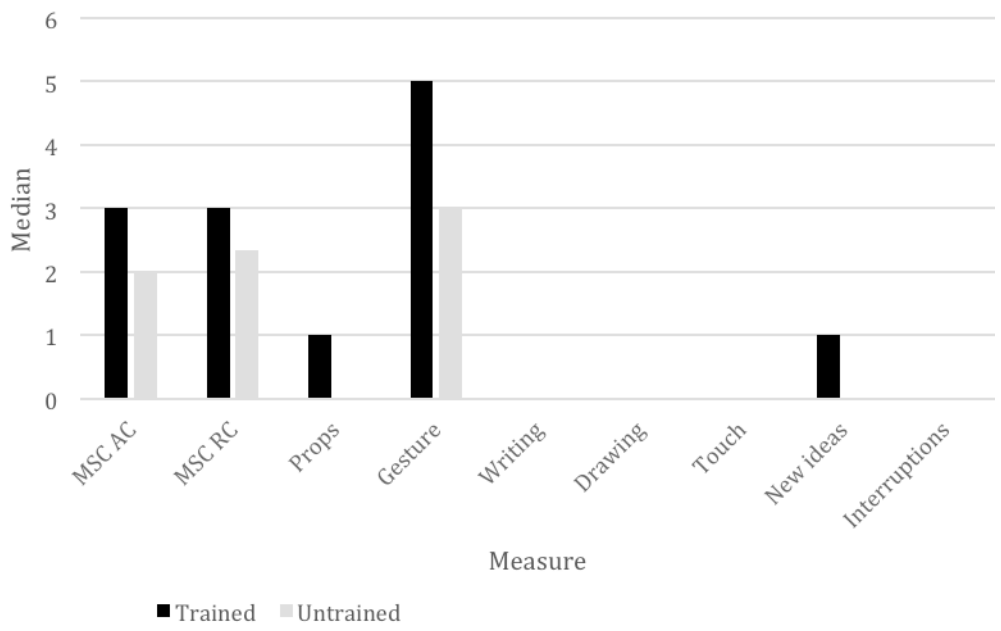
The same PWA participated in the conversations with both groups. There may have been a possible order effect in that all conversations with the untrained group occurred first, followed by conversations with the trained group of students. However the PWA received training prior to involvement in the conversations and had participated in other student and HP CPT programs. Therefore, differences between the trained and untrained students' experiences due to a practice effect for the PWA are likely to have been minimal. We acknowledge that the generalisability of the results may be limited by the restriction of the study to a single university site. We also

recognise that the conversations occurred in university clinic room and therefore may not be reflective of conversations that occur in everyday settings. The study results may also be limited by the use of consensus ratings rather than individual ratings for analysis. The study results may be further limited by the use of the approach described by Cunningham and Ward (2003), which was reported by the authors to have good intra-rater reliability for the identification of non-verbal communication behaviours, but variable intra-rater reliability for the analysis of conversation. The same PWA participated in the conversations with the trained and untrained students, and as a consequence the results of the PWA may potentially have been influenced by fatigue or practice effects. As there was no significant difference between the participation of the PWA in conversations with the trained or untrained students according to MPC Interaction and Transaction scores it is unlikely that fatigue or practice effects occurred. Furthermore, the PWA were given breaks between the two groups to minimise the potential for either effect to occur. The lack of significant differences for some of the measures may have been at least partially attributable to a high degree of variability due to small group numbers. Another limitation of our study was that as the PWA were not receiving SLP intervention at the time of the study up to date specific assessment data was not available. As the focus of the project was the impact of the CPT on the students rather than the PWA, we believe that this does not detrimentally influence the value of the study results. Correspondingly, as the PWA had participated in training prior to the current study, it could be argued that the students were not experiencing a real world interaction. However, the purpose of the PWA receiving prior training was to give them confidence to provide feedback to the HP students to support their skill development.

We acknowledge that the current study addresses the value of CPT using direct instruction only. Future research could explore the optimal pedagogy for CPT (e.g., direct instruction versus hands-on practice). Future research could also compare direct instruction with an active learning activity (e.g., comparing teaching strategies) to determine which teaching method supports greater improvement. This would enable educators and professionals to understand the most effective and time-sensitive method of providing CPT for PWA.

2.6 Conclusion

The results of the present study add further weight to the suggestion that SLP students may benefit from participation in CPT programs. In complement to previous research reporting that CPT programs increased the confidence of students when communicating with PWA, the present study suggests that these benefits may translate into tangible improvements in conversational skills when communicating with PWA. Increasing the communication skills of SLP students when communicating with PWA may enable students to focus more on building clinical skills than on fundamental communication skills during clinical placements.



Note. AC = Acknowledging Competence; RC = Revealing Competence

Figure 2.4.1

Graphical Representation of the Comparison of Conversation Performance Between Trained and Untrained Students

Table 2.3.2.1

Student Demographic Information

	Trained	Untrained
Age (Years)	23.89 (6.04)	25.58 (8.42)
Gender		
Male	1	0
Female	18	19
Course		
Second year undergraduate	13	12
First year graduate entry masters	6	7
Previous PWA contact		
Yes	4	3
No	15	16

Note. Standard deviations are provided in brackets. With the exception of age the data represent counts.

Table 2.4.1

Comparison Between Conversation Performance of Trained and Untrained SLP Students

Measure	Trained Median (IQR)	Untrained Median (IQR)	Mann-Whitney U	Z score	P value	Effect size^
MSC Acknowledging Competence	3.00 (2.00–3.00)	2.00 (2.00–3.00)	139.50	-1.284	.199	-
MSC Revealing Competence	3.00 (2.33–3.33)	2.33 (1.67–2.67)	85.50	-2.802	.005*	0.45
Use of props (n = 26)	1.00 (0.00–1.00)	0.00 (0.00–0.00)	104.00	-2.613	.009*	0.42
Use of gesture (n = 205)	5.00 (2.00–7.00)	3.00 (1.00–7.00)	147.50	-0.969	.332	-
Use of writing (n = 2)	0.00 (0.00–0.00)	0.00 (0.00–0.00)	161.50	-1.434	.152	-
Use of drawing (n = 0)	0.00 (0.00–0.00)	0.00 (0.00–0.00)	N/A	N/A	N/A	-
Use of touch (n = 0)	0.00 (0.00–0.00)	0.00 (0.00–0.00)	N/A	N/A	N/A	-
Introduction of new ideas (n = 29)	1.00 (0.00–2.00)	0.00 (0.00–0.00)	89.00	-2.928	.003*	0.48
Interruptions (n = 3)	0.00 (0.00–0.00)	0.00 (0.00–0.00)	171.00	-0.594	.553	-
Conversation breakdowns (n = 73)						
Major conversation breakdowns	1.00 (0.00–1.75)	0.00 (0.00–1.00)	100.50	-1.123	.261	-
Minor conversation breakdowns	1.00 (0.25–1.75)	1.50 (2.75–0.25)	109.00	-.744	.457	-
Successful conversation repairs (n = 32)	1.00 (1.00–1.00)	1.00 (1.00–1.00)	631.50	-.451	.651	-

Note. IQR = Interquartile Range; MSC = Measure of Skills in Supported Conversation; * P < .01; values in brackets represent IQR; Numbers in brackets represent the total number of times a behaviour occurred; N/A = not available, no participant in either group used the strategy; ^ effect sizes were calculated for significant P values only.

Table 2.4.2

Median MPC Interaction and Transaction scores for the PWA

MPC scale	Interacting with trained students	Interacting with untrained students
Interaction	3.00 (3.00–4.00)	3.00 (2.00–3.00)
Transaction	3.00 (2.00–3.00)	2.00 (2.00–3.00)

Note. IQRs are provided in brackets. No difference was statistically significant (i.e., all $p > 0.01$)

Table 2.4.3

Correlations Between Variables for the Students using Spearman's Rho

		MSCAC	MSCRC	Props	Gesture	Writing	New Ideas	Interruptions
MSCAC	rho	1.000	.584**	.140	.491**	.098	.359	-.067
	p	.	<.001	.402	.002	.558	.027	.690
MSCRC	rho		1.000	.286	.742**	.337*	.702**	.211
	p		.	.082	<.001	.039	<.001	.203
Props	rho			1.000	.097	.358	.209	-.042
	p			.	.562	.027	.208	.804
Gesture	rho				1.000	.184	.323	.206
	p				.	.269	.048	.215
Writing	rho					1.000	.289	.368
	p					.	.079	.023
New Ideas	rho						1.000	.151
	p						.	.365
Interruptions	rho							1.000
	p							.

Note. MSCAC = Measure of skill in Supported Conversation Acknowledging Competence; MSCRC = Measure of skill in Supported Conversation Revealing Competence; **. Correlation is significant at the 0.01 level (2-tailed); rho = Spearman's rank order correlation coefficient.

Table 2.4.4

Correlations Between Variables for the PWA using Spearman's Rho

		MPC Int	MPC Trans	Props	Gesture	Writing	Maj Breakdown	Min Breakdown	New ideas	Interruptions
MPC Interact	rho	1.000	.644**	.177	.416	-.229	.005	.143	.402	-.340
	p	.	<.001	.333	.018	.208	.979	.435	.023	.057
MPC Trans	rho		1.000	-.319	.049	-.180	-.444	.108	.509**	-.099
	p		.	.076	.789	.323	.011	.556	.003	.588
Props	rho			1.000	.156	.006	.383	-.100	-.131	-.302
	p			.	.393	.972	.031	.585	.473	.093
Gesture	rho				1.000	-.283	.228	.389	-.125	-.216
	p				.	.117	.209	.028	.496	.236
Writing	rho					1.000	.001	-.026	.072	.002
	p					.	.994	.889	.694	.991
Maj Breakdown	rho						1.000	-.076	-.104	-.024
	p						.	.678	.570	.895
Min Breakdown	rho							1.000	-.230	.307
	p							.	.206	.087
New ideas	rho								1.000	-.181
	p								.	.321
Interruptions	rho									1.000
	p									.

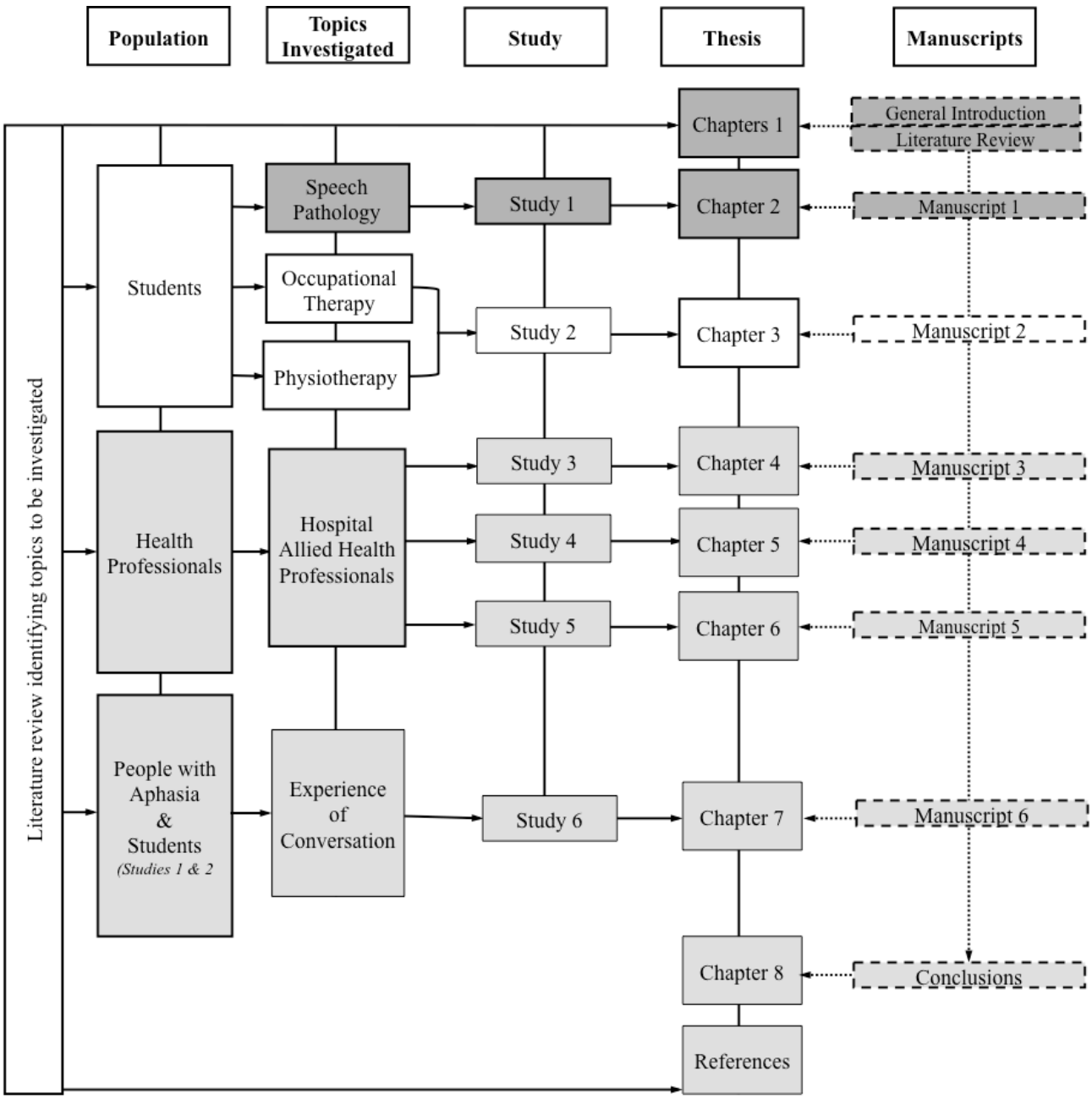
Note. MPC Int = Measure of Participation in Conversation Interaction score; MPC Trans = Measure of Participation in Conversation Transaction score; Maj = Major; Min = Minor; **. Correlation is significant at the 0.01 level (2-tailed); rho = Spearman's rank order correlation coefficient.

CHAPTER 3

Increasing the confidence and knowledge of occupational therapy and physiotherapy students when communicating with people with aphasia: A pre-post intervention study.

Chapter 2 established that SLP students who participated in CPT scored higher in MSC Revealing Competence and were able to engage in a more diverse and rounded conversation with PWA compared to untrained students; despite having completed relevant academic coursework (e.g. 'acquired adult neurogenic language disorders' subject). However, analyses of the conversations also indicated that between the student groups, there was no difference in other conversational markers (e.g. MSC Acknowledging Competence score or success of strategies initiated to repair conversation breakdowns). Thus, further research is necessary to ensure appropriate and timely training is provided to individuals interacting with PWA. As communication difficulties create substantial barriers within the healthcare setting it is important to identify whether a CPT intervention program can increase the knowledge and confidence of allied health students (regardless of their primary discipline), to avoid negative experiences, prior to clinical placements and/or employment.

As such, Chapter 3 presents the second pre-post intervention study, which explored whether a convenience sample of 28 OT and PT students have low confidence and limited knowledge of communication strategies when interacting with PWA. The manuscript is entitled "Increasing the confidence and knowledge of occupational therapy and physiotherapy students when communicating with people with aphasia: A pre–post intervention study" and was published in *Speech, Language and Hearing*, 2015 (Vol.18, Issue 3, pages 148 – 155). This manuscript is inserted as published, with the exception of formatting (for details, please refer page viii). Abbreviations are not re-defined in this chapter (please refer page xxix). All references have been combined and are presented in a single reference list at the end of this thesis (pages 124-140).


Population
Topics Investigated
Study
Thesis
Manuscripts
Literature review identifying topics to be investigated
Students
Health Professionals
People with Aphasia & Students
(Studies 1 & 2
Speech Pathology
Occupational Therapy
Physiotherapy
Hospital Allied Health Professionals
Experience of Conversation
Study 1
Study 2
Study 3
Study 4
Study 5
Study 6
Chapters 1
Chapter 2
Chapter 3
Chapter 4
Chapter 5
Chapter 6
Chapter 7
Chapter 8
References
General Introduction
Literature Review
Manuscript 1
Manuscript 2
Manuscript 3
Manuscript 4
Manuscript 5
Manuscript 6
Conclusions

Increasing the confidence and knowledge of occupational therapy and physiotherapy students when communicating with people with aphasia: A pre–post intervention study.

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3.1 Abstract

Background: This study investigated OT and PT students' level of confidence and knowledge of strategies for communicating with PWA before and after a CPT program.

Method: 28 PT and OT students participated in a pre–post CPT program. Students completed a customised mixed-methods questionnaire before and after the intervention. The CPT program involved a lecture about effective communication strategies followed by a conversation with PWA to practice strategies learnt.

Results: Before CPT, students were not confident with the possibility of communicating with PWA. Students demonstrated rudimentary knowledge of supported conversation, identifying a maximum of five strategies for communicating effectively with PWA. Following intervention, students demonstrated increased confidence. Students' knowledge of effective communication strategies also improved, with students identifying a maximum of 16 suitable strategies post-training.

Conclusion: The results suggest that OT and PT students have potential to benefit from practical training in supported communication with PWA, which may assist them during placements in clinical settings with neurological patients or subsequent employment.

3.2 Introduction

Aphasia is a loss of language function resulting most frequently from stroke (Kagan, 1998). An estimated 15 million people worldwide experience a stroke each year (World Health Organisation, 2009a; World Heart Federation, 2014) and approximately one-third of this population will have aphasia (Dickey et al., 2010). In addition to neurological damage caused by stroke to the language centres of the brain, aphasia can have severe psychosocial impacts on individuals and families and may cause substantial barriers to participation in everyday life, including participation in healthcare (Parr, 2007; Ross et al., 2006; Simmons-Mackie & Damico, 2007; Tsouli, Kyritsis, Tsagalis, Virvidaki, & Vemmos, 2009). This article presents a rationale for providing practical education and training to students in the allied health professions and describes a preliminary study investigating a CPT program that may have potential for preparing allied HPs for working with people with communication difficulties.

Knowledge and awareness of aphasia within the community is limited (Code et al., 2001). There is a general misunderstanding regarding the correlation between an individual's ability to communicate and their intelligence (Plowman et al., 2012). Commonly, an individual with aphasia will have their cognitive and social competence underestimated, which can have a detrimental impact on their psychosocial wellbeing and QoL (Kagan, 1998; McPhail, Beller, & Haines, 2008; Ross et al., 2006). For example, in the health and rehabilitation context, PWA may be excluded from decisions regarding daily living or hospital discharge planning due to their communication difficulties (McVicker et al., 2009; O'Halloran et al., 2011; Parr, 2007). Knight et al. (2006) found that HPs spent less time disseminating information to PWA compared to those without aphasia.

According to Leach et al. (2010), it is imperative that healthcare professionals have adequate skills to facilitate re-engagement of PWA in communication activities and to empower PWA to be active members in their own healthcare management and rehabilitation. Research has demonstrated that an obstacle to engaging PWA can be the limited ability of HPs to effectively and confidently communicate with PWA (Burns, Baylor, Morris, McNalley, & Yorkston, 2012; O'Halloran et al., 2011; Rautakoski, 2011; Welsh & Szabo, 2011). Furthermore, when communication knowledge and therapy is not the focus of a HP's scope of practice (e.g., PT), interacting with a person who has a communication impairment may cause elevated levels of anxiety, reduced confidence, and an inaccurate perception of their level of function (Carling-Rowland, Black, McDonald & Kagan, 2014; Hill et al., 2010; Kagan, 1998; Knight et al., 2006; Legg et al., 2005). However, even SLPs who are considered "experts" in the field may find communicating with PWA challenging (Finch et al., 2013).

Repeated experience of applying clinical skills has been associated with higher levels of confidence and knowledge (Lupu, Steward, & O'Neill Christie, 2012). A review by Hill et al. (2010) found that students from various health settings (including medicine, nursing, and allied health) felt underprepared to manage basic communication requirements during clinical placements. The importance of patient–provider communication training is becoming increasingly important and within the area of healthcare education, collaborative teaching with SLPs to utilise their unique knowledge in communication techniques to facilitate interactions with PWA has been investigated (Burns et al., 2012). However, SLP students identified that they also felt underprepared to interact with PWA despite their specialised knowledge of communication disorders, as all students do not receive explicit practical training within their academic coursework (Finch et al., 2013). Organisations such as the Aphasia Institute in Toronto provide training for healthcare professionals in a freestanding format about communication techniques for PWA. Two previous studies have investigated training nursing staff and medical students about PWA and communication strategies to improve healthcare management and case history information (Legg et al., 2005; Welsh & Szabo, 2011). These studies both reported favourable and advantageous outcomes for participants and patients alike. However, to the present authors' knowledge, no allied health or medical programs currently provide routine standardised training on effective communication engagement for PWA and various other communication deficits (Burns et al., 2012; Finch et al., 2013; Wilkinson et al., 2013). Improving students' knowledge, confidence, and communication skills to implement strategies for interacting with PWA and communication disabilities, prior to independent practice, will likely facilitate junior allied HPs preparedness for practice and the subsequent clinical care for PWA (Finch et al., 2013; Wilkinson et al., 2013). It is therefore necessary to investigate interventions that have potential to educate allied HP students in effective communication techniques for PWA.

One potential method to reduce the communication difficulties experienced by PWA in the healthcare setting is through CPT. CPT is an intervention that directly targets the communication partner. Anyone a person with aphasia may interact with in their home or community environment may be considered a communication partner, and CPT explicitly teaches strategies and supports to facilitate communication, rather than training the person with aphasia (Simmons-Mackie et al., 2010). A systematic review has previously examined the impact of CPT on numerous aspects of PWA's life and their communication partners including the impact on language, psychosocial adjustment, participation in activities, and QoL (Simmons-Mackie et al., 2010). This systematic review reported that skilled communication partners minimise communication disability, and the effects of CPT are generalisable to both familiar and unfamiliar communication partners and across a range of types and severities of aphasia. Further, the review concluded that CPT ensuring

skilled communication partnership should be included as a means to provide communication access and environmental support across many settings (Simmons-Mackie et al., 2010).

To date, CPT has typically been provided to family members, significant others, and volunteers (Joyeux, Rives, & Kerlan, 2011; Kagan et al., 2001; Lyon et al., 1997; Rayner & Marshall, 2003; Simmons-Mackie & Damico, 2007). Previously, students completing entry-level health profession qualifications were likely to interact with PWA during clinical placements but less likely to receive practical aphasia-specific communication training (Finch et al., 2013). However, several studies have explored the benefits of student training, interdisciplinary collaboration, and the impact upon patient–provider communication effectiveness (Burns et al., 2012; Legg et al., 2005; Shelton & Shryock, 2007; Welsh & Szabo, 2011; Wilkinson et al., 2013). These studies identified the importance of developing knowledge and confidence of communication skills to effectively interact with PWA, and also highlighted the needs for ongoing training and awareness, so patients with aphasia and other related communication disorders encounter improved health outcomes (Burns et al., 2012; Legg et al., 2005; Welsh & Szabo, 2011; Wilkinson et al., 2013). Previous studies have also found that educating healthcare professionals about aphasia and developing communication access goals improved their knowledge and encouraged the development of methods to aid communication in their healthcare facilities (Simmons-Mackie et al., 2011). Several successful CPT programs currently exist including the Connect programs in the United Kingdom (Connect – The Communication Disability Network, 2007, 2011, 2013) and SCA™ training program based in Canada (Kagan et al., 2001). A study by Blom Johansson, Carlsson, Ostberg and Sonnander (2012) found that qualitative interviews and survey studies also provide evidence that PWA acknowledge the importance of communication partners' understanding of aphasia and the use of supportive conversation strategies. The outcomes for PWA, in this study, were positively impacted by the use of supported conversation strategies, which resulted in personal and clinical interactions being considered more efficacious (Blom Johansson et al., 2012).

The effectiveness of CPT has been evaluated with family, friends, and HPs; however, it has yet to be evaluated with students from allied health professions. This preliminary study aimed to investigate the use of a CPT program for PWA on a cohort of OT and PT students. Specifically, the study investigated whether there was a change in the students' level of confidence in communicating with PWA and their knowledge of strategies following the program. Entry-level PT and OT students were selected as the target population, as these students had not encountered PWA in clinical settings at this stage of their education program and had not received specialised communication training for communicating with PWA during their university coursework. It was hypothesised, based on previous research (e.g. Finch et al., 2013; Hill et al., 2010; Kagan et al.,

2001; Simons-Mackie & Damico, 2007; Simmons-Mackie et al., 2011) that these HP students would demonstrate improved knowledge and confidence for communicating with PWA after receiving the CPT intervention.

3.3 Method

3.3.1 Design

A preliminary educational intervention study with pre- and post-intervention assessment was undertaken.

3.3.2 Participants

Participants included 28 English speaking, entry-level OT, and PT students recruited at a single university site. Participants consisted of third-year undergraduate or second-year graduate-entry master's degree students. Written informed consent was obtained from each participant prior to inclusion in the study. Exclusion criteria were being unable to attend the training on the arranged training day, having previously completed aphasia-specific communication training, or having previously had frequent interactions with PWA (for example, living with a family member with chronic aphasia).

3.3.3 Measures

A customised mixed-methods questionnaire was adapted from the self-report questionnaire developed by Connect (Connect – The Communication Disability Network, 2013). *"Making Communication Access a Reality"* is a CPT program run by Connect – The Communication Disability Network in the United Kingdom (Connect – The Communication Disability Network, 2013). The questionnaire in this study required participants to rate their confidence when communicating with PWA on a single 100 mm visual analogue scale (VAS) ranging from *"Not at all confident"* (0 mm) to *"Very confident"* (100 mm). Participants were also required, in open-ended response format, to identify and document any strategies, techniques, or resources that could be employed when communicating with PWA.

3.3.4 Procedure

Ethical clearance was obtained from the Metro South Health Human Research Ethics Committee and UQ MREC. Students were recruited during a brief presentation explaining the study by a member of the research team at the conclusion of one of their academic coursework lectures. The students were informed that their participation in the study was voluntary and would not have any impact upon their subject grade or contribute toward coursework credit. A research team member provided students who were interested in participating in the study with an information sheet and consent form.

The intervention program was a CPT package based on *"Making Communication Access a Reality"* program (Connect – The Communication Disability Network, 2013) and aspects of SCA™

(Kagan et al., 2001) including content and practical components. Participants attended one 60 minute lecture about aphasia and strategies to communicate effectively with PWA (including the pre-questionnaire immediately prior to the lecture). Following this session, student pairs had a 15 minute conversation with a trained PWA (single or dyad depending on severity of the PWA's aphasia) in a supported environment and were encouraged to apply relevant strategies and techniques to facilitate discussion. The PWA also had an opportunity to provide real time and reflective feedback to the students regarding the conversational exchange and strategies employed. The post-questionnaire was then given to the HP students immediately post this conversation feedback session. The 10 PWA (five females, five males) involved in this study had a median age of 64 years (IQR 59–69 years) and were between 2 and 6 years post-stroke (median = 3 years). They presented with varying levels of severity and on the Western Aphasia Battery (WAB) assessment achieved an Aphasia Quotient (AQ) score of 42.8–81.9 (median AQ = 61). One PWA participant with global aphasia and comorbid dyspraxia had not been assessed using the WAB.

The PWA had previously participated in 12 hours of training over a six week period adapted from *"Running a Conversation Partner Scheme"* (Connect – The Communication Disability Network, 2011). This course provided the PWA with information regarding communication, strategies, giving feedback, and training to use the evaluation tool that rated participant performance during practical conversation sessions.

3.3.5 Data analysis

Demographic information for the participants was analysed using conventional descriptive statistics. To investigate whether there was a change in participants' confidence levels after the program, the confidence rating data collected from the VAS were analysed using the Wilcoxon signed-rank test, as the data were not normally distributed. Content analysis of participants' qualitative written responses was used to examine the identified strategies that could assist communication with PWA (Marks & Yardley, 2004; Patton, 2002). The validity and effectiveness of these responses were determined based on previous literature and the expert opinions of experienced SLP members of the research team who each had more than 5 years of experience working in the area of aphasia. Two independent researchers coded each strategy to four predetermined themes and calculated the number of potential strategies identified. In each category, the sum total of the most prominent strategies or resources was reported as a gross indicator. The two researchers then met to discuss their findings and reach a consensus. Upon review, those strategies deemed to be of questionable or uncertain effectiveness by experienced SLP members of the research team were described separately. A third independent researcher was available to arbitrate any incongruence between the principal coders, however this was not required. The specific feedback from the PWA to the individual HP students was not reported.

3.4 Results

A total of 28 students were elected to participate in the study; including 7 OT students and 21 PT students. These participants consisted of 18 undergraduate and 10 graduate-entry master's students. The sex distribution of students (7 males, 21 females) was consistent with the spread in the respective courses. The mean age (standard deviation (SD), total range) of the students was 23.2 years (3.4, 19–36 years). The majority of the students had not had any previous contact with PWA (n = 26, 92.8%). The remaining students had experienced limited contact with PWA through work (n = 2, 7.1%). Specifically, two PT students reported prior contact with PWA outside a clinical placement. One student reported four occasions of 15 minute contact within an administrative work setting and the other participant reported 28 hours of contact with PWA whilst on self-initiated observational work experience.

The median (IQR) confidence rating was 18 mm (12–24 mm) before the training. After the training, the median (IQR) confidence rating was 71 mm (55–83 mm). This indicated that the students had greater confidence in communicating with PWA after the training; $z = 4.624$, $P < 0.001$. In total, 40 individual strategies or resources were identified that could be used when communicating with PWA. A comparison of the pre–post questionnaire responses revealed that all participants (n = 28) were able to identify a greater number of strategies post-training (0–5 strategies on the pre-training questionnaire in comparison to 1–18 strategies on the post-training questionnaire). Participants identified a median (IQR) of 1.5 (1–2) useful strategies before training and a median (IQR) of 2 (2–4) useful strategies after training. Strategies were coded into four key themes (Table 3.4.1), which included physical strategies, verbal communication strategies, visual information, and environmental changes. Some of the identified strategies deemed useful included gesture, providing yes/no questions, writing down key words, and using aphasia-friendly information. However, there were also some ambiguous or possibly ineffective strategies suggested, which included using sign language, talking about intellectual things, and using audio cues.

3.5 Discussion

Students reported greater confidence in communicating with PWA and greater knowledge of communication strategies for interacting with PWA after completion of the CPT, which supported the study hypothesis. The students involved in this investigation were able to identify a greater range of effective strategies for communicating with PWA following training. Prior to CPT, participants had a tendency to describe physical strategies, such as gesture, to aid their communication with PWA approximately 15% of the time. However, at post-training, the participants incorporated 50% more verbal communication strategies into their skill set (e.g., acknowledging attempts, clarifying, and providing time to respond). Following training, strategies frequently identified by students included physical, verbal, and visual strategies (such as gestures),

establishing rapport, using key words, and allowing adequate response time, using communication boards and relevant aphasia-friendly material. It was encouraging that the strategies reported after the training were consistent with the training content and are supported by the research literature that has investigated effective strategies to facilitate communication with PWA (Kagan et al., 2001).

In addition to the principal finding of the study, it was also noteworthy that the students reported a low pre-intervention confidence rating for communicating with PWA. This is consistent with previous studies among students from other health professions who had not yet had exposure to PWA during clinical placements and who had not received pragmatic information of this nature during their coursework (Finch et al., 2013; Hill et al., 2010). With consistent findings of low confidence in communicating with PWA emerging from studies among students from several professions, it is not surprising that qualified healthcare professionals have also reported avoiding situations that involve people who have communication impairments (Knight et al., 2006). This further highlights the requisite need for integrated communication training in the curriculum of entry-level training for HPs who will inevitably encounter PWA in subsequent clinical practice.

3.5.1 The impact of CPT

The new findings from this study among university students completing their entry-level qualifications in therapy professions adds to the growing body of literature reporting favourable findings for CPT. The findings of the study expand on the previous evidence by demonstrating that CPT resulted in reports of higher confidence levels among HP students after completing the training. This has been the first study to include entry-level students from PT and OT programs. It seems likely that students completing entry-level allied health profession qualifications will interact with PWA during clinical placements but unlikely to have received practical aphasia-specific communication training. The favourable findings of the present study indicate that CPT prior to clinical placement may be beneficial for HP students from therapy professions.

3.5.2 Strengths and limitations

Several strengths and limitations should be considered when interpreting the findings from this investigation. In the context of this study, it seemed reasonable to consider the limitations of the study prior to discussing the implications for practice. First, the study sample included a relatively small convenience sample of students from one geographical region. Moreover, dissimilar students may not have responded in the same way; or possibly with a lesser effect size due to the self-selected nature of the sample in this study (Cook, 1994). Similarly, this study was a pre–post intervention design and not a randomised control trial. An educational trial that withholds training from student participants will likely have less ethical implications than a clinical trial withholding treatment from patients. Indeed, the use of a control group in this study would have allowed us to

draw stronger conclusions about the effectiveness of the training. However, in the absence of opportunity for students to have learned communication strategies from other sources between assessments, the authors are satisfied that the improved awareness of communication strategies can be attributed to the intervention provided in this study. These findings indicate that an educational randomised trial of this intervention is a promising prospect for subsequent research. Another consideration is the uneven representation of sex. However, this reflects the sex distribution in therapy professions that have higher proportions of females than males.

The use of questionnaires to collect data could be considered both a strength and a weakness. The use of low-burden questionnaires allowed the collection of quantitative information and prevented missing data from the pre- and post-intervention assessments. However, the strategies that were reported did not necessarily reflect the real time application of the communication strategies used by the students during the conversation. Similarly, there may be a difference between being able to recall useful strategies and being able to successfully implement the strategy. A further limitation is that post-intervention measures were taken immediately following the training, and it is not known to what extent the gains in confidence and knowledge were maintained. Further research is needed to examine whether these gains influence confidence and skills at later stages, for example, when on clinical placement.

3.5.3 Implications for practice

In the absence of a comparator group (who did not receive CPT), findings from this study should be considered preliminary in nature. However, when considered in the context of the broader literature, there are several implications for preparing students for interacting with PWA. Previous research has indicated that the way a communication partner interacts with a PWA is as important as the communication abilities of the PWA (Paul & Sanders, 2009; Ross et al., 2006; Simmons-Mackie et al., 2010). Positive attributes of communication partners include active listening, patience, perseverance, and a genuine desire to perceive the intended message; in addition to an appropriate surrounding environment. Therefore, it is likely that including CPT style training into the academic curriculum for entry-level students would enhance their confidence and equip them with strategies for communicating with PWA (during clinical placements and potentially their clinical practice among patients with acquired brain injuries post-graduation). Alternatively, similar benefits may result from the inclusion of a CPT skills program as an adjunct to clinical placements at facilities where students are likely to encounter PWA. Minimising communication difficulties between students and PWA during clinical placements will likely promote positive interactions, enhanced learning, and patient-centred care by allowing the student and PWA (as well as clinical supervisors) to focus on the content of interactions and task at hand rather than the communication (Finch et al., 2013). This would also have potential to alleviate anxiety among new HPs and prevent

avoidance of interactions with PWA in the future. While findings from this investigation were encouraging, strong recommendations cannot be made based on this preliminary research alone and further research is warranted.

3.5.4 Future research

By understanding the implications of reduced knowledge and confidence of communication strategy use, future research could investigate the application of CPT programs within healthcare degrees across a range of professions to ensure that students feel equipped to interact with individuals with communication challenges. Explicit teaching of communication partner strategies at the undergraduate stage of professional development would likely provide an enhanced learning experience in the area of interpersonal communication, which the authors consider to be of utmost importance for clinical placements. This would enable students to focus on applying their clinical reasoning and technical skills, rather than their cognitive attention being burdened by difficulty with communication. However, further research in this regard is required before this assertion could be made with confidence. It would also be useful to investigate whether benefits derived from CPT are maintained (or further enhanced) over time as well as determining how well techniques and strategies taught in the CPT program translate into clinical practice. Analyses of video recorded conversations with PWA before and after the training could have yielded more qualitative information, although may have also introduced a learning effect from the initial assessment. Nonetheless, analysis of video recordings could provide further information regarding the real time application of strategies for communicating with PWA.

3.6 Conclusion

PT and OT students demonstrated improved knowledge of communication strategies and confidence for interacting with PWA after completing the CPT. Implementing this type of practical training as part of university coursework or as an adjunct to clinical placements will likely promote positive communication between students and PWA. However, these findings should be considered with caveats due to the nature of the sample, pre–post intervention design, and absence of a control comparator group. Further research is required to examine the translation of skills learned during training to real-life application when communicating with PWA, as well as whether learned skills are maintained over time. Future research in this field will ultimately contribute to improved understanding of aphasia and awareness of language accessibility being as important as physical access to facilitate PWA to successfully engage with HPs and significant others in their home, community, and healthcare settings (Code et al., 2001; Parr, 2007; Simons-Mackie & Damico, 2007; Simmons-Mackie et al., 2011).

Table 3.4.1

Content Analysis of Potential Strategies Identified by Students for Communicating with PWA, and the Number of Times (n) Strategies were Coded to Each Response Category

Themes	Response Categories	Rating	Pre-training Responses (n)	Post-training Responses (n)	Percentage (%)
Physical Strategies	Gestures	*	4	1	0.18
	Pointing	*		1	0.04
	Nodding	*		2	0.07
	Sign language		1		0.04
	Non-verbal	*	2		0.07
Verbal Communication Strategies	Yes / No questions	*	1	1	0.07
	Closed questions	*	1		0.04
	Establish rapport	*	1		0.04
	Open-ended questions		1		0.04
	Simple language	*	2		0.07
	Time to respond	*		7	0.25
	Slow down speech rate	*		1	0.04
	Key words	*		6	0.21
	Short / Concrete / Concise	*		6	0.21
	Check for understanding	*		2	0.07
	Rephrase / Clarify	*		6	0.21
	Acknowledge attempts	*		18	0.64
	Negotiate to re-visit	*		2	0.07
	Do not ask direct questions		1		0.04
	Ask PWA to explain in an alternative way		1		0.04
	Discuss intellectual things		1		0.04
	Take responsibility			1	0.04
	Empathy			1	0.04
Visual Information	Communication boards	*	1		0.04
	Communication cards	*	5	1	0.21
	Pictures / Signs / Maps	*	3	1	0.14
	Drawing	*	1		0.04
	Writing (words / messages)	*	3	1	0.14
	AAC	*	2		0.07
	Aphasia friendly material	*		2	0.07
	Speech facilitating technology / machine for patients to type into		2		0.07
	Audio cues		1		0.04
Environmental Changes	Ask a Speech Pathologist	*	3		0.1
	Look up a textbook / notes	*	2		0.07
	Family / Friends	*		6	0.21
	Reduce background noise	*		2	0.07
	Clear signage / information	*		1	0.04
Total Number of Strategies Identified			39	69	
Total Number of Effective (*) Strategies Identified			28	66	

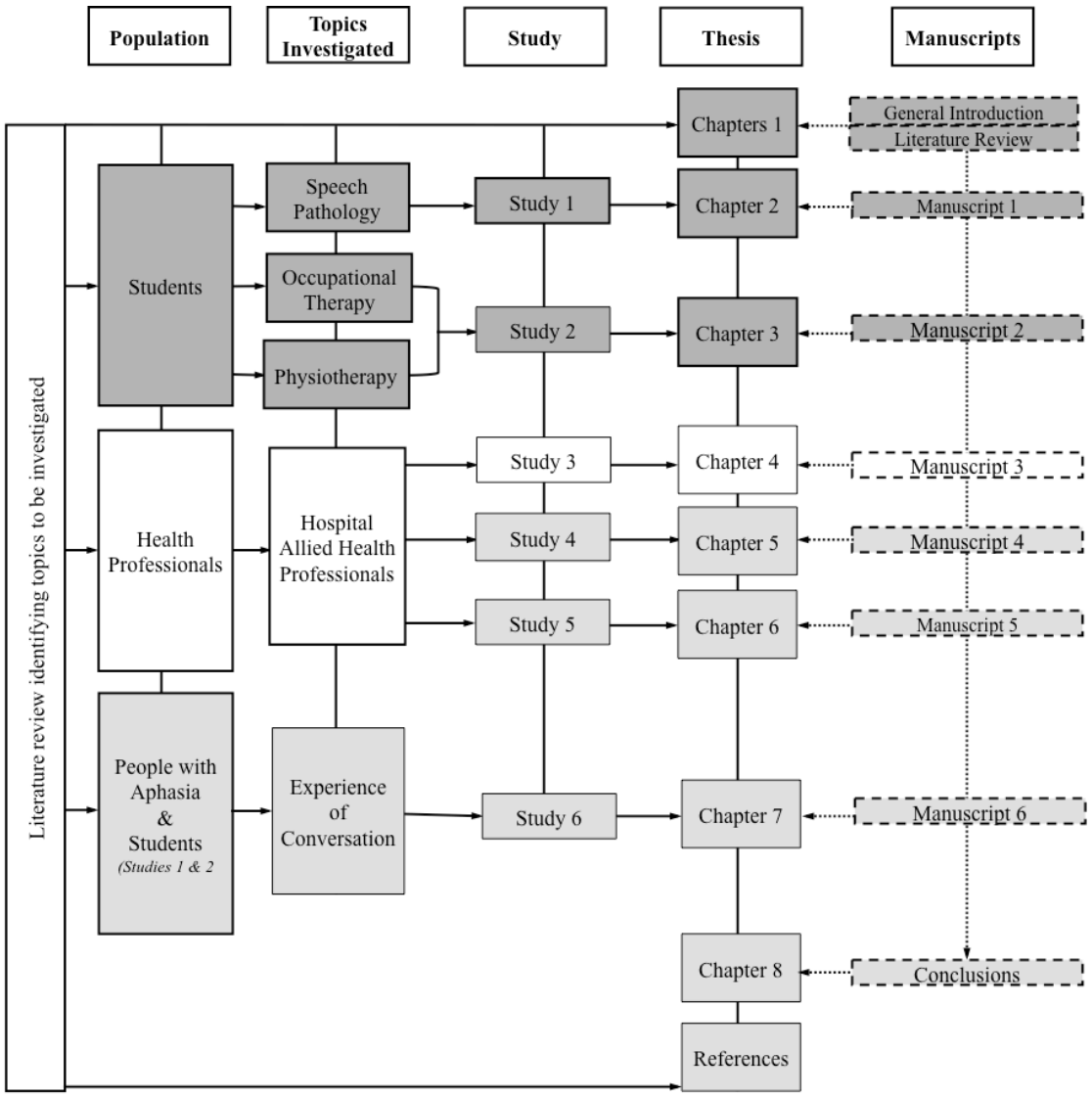
*Note. *Indicates effective strategy.*

CHAPTER 4

The confidence and knowledge of health professionals when interacting with people with aphasia in a hospital setting.

The results of the studies in Chapter 2 and 3 indicated that SLP, OT and PT students all reported higher levels of proficiency and improved confidence and knowledge following participation in a CPT program, irrespective of their profession. Based on these findings, it was of interest to identify whether similar results were found in HPs currently working in a hospital setting. This was based on the assumption that the HPs had likely been working with PWA since graduation, so it was of interest to know how confident they were and their knowledge of communication strategies. And further, it was important to determine if the need for communication training when interacting with PWA, was discipline specific or remained beneficial regardless of experience and/or formal communication-related training.

Chapter 4 summarises the findings of 90 HPs' knowledge and confidence for communicating with PWA in a clinical context, as per their current baseline level of operation without completing the proposed CPT program. The following manuscript entitled "The confidence and knowledge of health professionals when interacting with people with aphasia in a hospital setting" was published in *Disability and Rehabilitation*, 2017 (pages 1288-1293). This manuscript is inserted as published, with the exception of formatting (for details, please refer page viii). Abbreviations are not re-defined in this chapter (please refer page xxix). All references have been combined and are presented in a single reference list at the end of this thesis (pages 124-140).


Population
Topics Investigated
Study
Thesis
Manuscripts
Literature review identifying topics to be investigated
Students
Health Professionals
People with Aphasia & Students
(Studies 1 & 2
Speech Pathology
Occupational Therapy
Physiotherapy
Hospital Allied Health Professionals
Experience of Conversation
Study 1
Study 2
Study 3
Study 4
Study 5
Study 6
Chapters 1
Chapter 2
Chapter 3
Chapter 4
Chapter 5
Chapter 6
Chapter 7
Chapter 8
References
General Introduction
Literature Review
Manuscript 1
Manuscript 2
Manuscript 3
Manuscript 4
Manuscript 5
Manuscript 6
Conclusions

The confidence and knowledge of health professionals when interacting with people with aphasia in a hospital setting.

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4.1 Abstract

Background: The aim of the study was to describe and compare the confidence and knowledge of HPs with and without specialised speech-language training for communicating with PWA in a metropolitan hospital setting.

Method: 90 HPs from multidisciplinary teams completed a cross-sectional customised survey to identify their demographic information, knowledge of aphasia, current use of supported conversation strategies and overall communication confidence when interacting with PWA using a 100mm VAS to rate open ended questions. Conventional descriptive statistics were used to examine the demographic information. Descriptive statistics and the Mann-Whitney U test were used to analyse VAS confidence rating data. The responses to the open-ended survey questions were grouped into four previously identified key categories.

Results: The HPs consisted of 22 (24.4%) participants who were SLPs and 68 (75.6%) participants from other disciplines (non SLP HPs). The non SLP HPs reported significantly lower confidence levels ($U = 159.0$, $p < .001$, 2-tailed) and identified fewer strategies for communicating effectively with PWA than the trained SLPs. The non SLP HPs identified a median of two strategies identified IQR = 1–3) in contrast to the SLPs who identified a median of eight strategies (IQR = 7–12).

Conclusion: These findings suggest HPs, particularly those without specialised communication education, are likely to benefit from formal training to enhance their confidence, skills and ability to successfully communicate with PWA in their work environment. This may in turn increase the involvement of PWA in their healthcare decisions.

4.2 Introduction

Aphasia is a condition that affects expression and/or understanding of language due to injury or disease of the brain centres responsible for language, for example as a result of stroke (Nadeau et al., 2000). It is estimated that up to 38% of people present with aphasia following stroke (Pedersen et al., 1995). The debilitating nature of aphasia can create a significant barrier to communication for both PWA and the HPs with whom they interact (Kagan et al., 2001; Parr, 2007). This communication barrier may not only be frustrating for PWA but also have deleterious effects on communicative interactions in clinical settings. It may adversely affect the delivery of healthcare education to PWA and minimise the involvement of PWA in healthcare related decision-making processes (Leach et al., 2010).

Research has found that there is uncertainty for HPs around how to interact with PWA and a lack of knowledge, education and skills training for troubleshooting communication breakdowns (Legg et al., 2005; McVicker et al., 2009; Murphy, 2006; Parr, 2007). As a result, levels of increased anxiety and reduced clinical confidence may manifest. Furthermore, frustration may ensue and reduce clarity around how to proceed or approach the situation differently in the future (Carling-Rowland et al., 2014; Hill et al., 2010; Kagan, 1998; Knight et al., 2006; Legg et al., 2005). In particular, other research has suggested that non SLP HPs have a limited understanding about how to communicate with PWA and do not have sufficient skills to confidently and effectively aid communication engagement (Burns et al., 2012; Leach et al., 2010; O'Halloran et al., 2011; Rautakoski, 2011; Welsh & Szabo, 2011). Prior research has also identified that although SLP HPs are specifically trained in communication, similar challenges may be perceived for interacting with PWA, particularly based on previous experience, students and caseload exposure (Finch et al., 2013). As discussed by Fallowfield et al. (2002) communication difficulties encountered in a hospital setting are not automatically resolved by clinical experience and the breadth of skills necessary to facilitate communication in that specific practice setting should not be presumed.

Communication difficulties associated with aphasia may be offset by compensatory skills or communication strategies initiated by HPs with specialised training to support communication with PWA (Blom Johansson et al., 2012). Researchers have been investigating the outcomes of employing a social approach to intervention rather than an impairment-focussed medical approach, as a social approach enables barriers to be reduced, improves access and assists communication (Kagan et al., 2001; Law, Bunning, Byng, Farrelly, & Heyman, 2005). A study by Leach et al. (2010) investigated the goal-setting practices of allied health disciplines (OT, PT and SLP) in a subacute rehabilitation setting. Specifically the study was interested in patients who had had a stroke and data was collected though semi-structured email interviews with therapists. The authors

concluded that the main approaches utilised by therapists were typically patient-centred, therapist led and therapist controlled. However, the severity of a patient's aphasia may have influenced the approach selected, with therapists choosing therapist led or therapist controlled impairment based approach in patients with more severe stroke, before progressing onto participation and activity based goals (Leach et al., 2010). The authors' recommendations highlighted the potential for education regarding diagnostic information and communication strategies to minimise barriers to patient-centred therapy.

The authors of a systematic review of communication training in aphasia concluded that efficacious communication training and communication promoting therapy strategies can be implemented in a number of ways that may support better patient engagement in rehabilitation settings (ASHA, 2015; Simmons-Mackie et al., 2010). For example, SCA™ is a communication method that encourages communication with PWA as well as acknowledging and revealing a person with aphasia's competence. Techniques include detailed pictographs, spoken or written words, gestures or body language and drawings (Kagan et al., 2001). *"Supported Communication Intervention"* is also an aphasia rehabilitation approach that facilitates social interaction opportunities by emphasising multimodal communication and partner training. It consists of three components that include training communication partners, encouraging social communication (e.g. aphasia groups) and using augmentative and alternative communication (AAC) as appropriate (Rodgers & Alarcon, 2007). *"Promoting Aphasics' Communication Effectiveness"* is another treatment approach that uses various modalities to support message exchange by improving conversational skills and encouraging active participation by the PWA. The clinician and person with aphasia participate in role-play by taking turns as being either the "messenger" or the "receiver" (Chapey et al., 2000). Conversational Coaching and Script Training are two other methods that can be used to improve communication for PWA with their conversational partners (ASHA, 2015). In Conversational Coaching, the SLP's role is the "coach" for both partners in the exchange (PWA and non PWA) and provides on-line feedback and modification, whilst Script Training requires learning and practicing a constructed monologue / dialogue that is written on a particular topic (Cherney, 2011; Hinckley, 2009). More consumer driven and real-life goal acquisition approaches include Social and Life Participation Effectiveness, which looks at what a PWA can and cannot do with support as well as the needs of their family members, and the *"Life Participation Approach to Aphasia"* by supporting re-engagement in daily activities and the procurement of short and long-term life goals (ASHA, 2015; Cherney, 2011). For more detailed descriptions of these and other approaches, see Simons-Mackie (Simmons-Mackie et al., 2010) and ASHA (ASHA, 2015).

CPT is perhaps the leading candidate among training approaches that may be targeted directly at improving HPs confidence and ability to communicate with PWA (Connect – The Communication Disability Network, 2013; Hill et al., 2010; Legg et al., 2005; Lyon et al., 1998; Turner & Whitworth, 2006). CPT expands communication opportunities for PWA and provides strategies for both PWA and their communication partners (e.g. HPs) to support effective communication exchange (Horton et al., 2016b; Simmons-Mackie et al., 2010). It can be adapted to the setting as required via dyad-focussed interventions, practical workshops, general education sessions and / or whatever model is deemed most appropriate for staff to be trained (Horton et al., 2016b; Simmons-Mackie, 2014). Prior research has demonstrated that volunteers, family members and medical students have improved interactions with PWA following involvement in a CPT program (Cameron et al., 2015; Finch et al., 2013; Kagan, 1998; Legg et al., 2005; Rayner & Marshall, 2003; Turner & Whitworth, 2006). The results of the present study suggest that HPs, and in particular HPs who are not SLPs, have limited knowledge about aphasia and many have low levels of confidence. Consequently, it can be posited that training in how to communicate with PWA would be likely to improve confidence and knowledge to support interactions between these HPs and PWA in hospital settings.

The aim of the present study was to investigate the current confidence and knowledge of communication strategies of HPs from multidisciplinary teams in a hospital setting when interacting with PWA. The study also wanted to ascertain whether there was a comparative difference between SLPs and non SLP HPs in this hospital setting. It was hypothesised, based on previous research (see, for example Finch et al., 2013; Kagan, 1998; Simmons-Mackie et al., 2011) that SLPs would demonstrate higher levels of knowledge and confidence for communicating with PWA. The purpose underpinning the study was to determine whether there was a need for training HPs in how to communicate with PWA and whether this need was isolated to disciplines who did not receive formal training in communication as the focus of their university programs (in comparison to SLPs who receive formal communication-related training). The rationale for investigating this was founded in the authors' belief, that a lack of confidence and knowledge of strategies for communicating with PWA among HPs working in hospital settings, would be likely to be an indicator of their potential to benefit from effective communication-related training.

4.3 Method

4.3.1 Design

A cross-sectional survey investigation was used.

4.3.2 Setting and participants

Participants included a convenience sample of 90 English speaking HPs who worked across a range of health disciplines in a single site metropolitan Australian hospital. The HPs involved in

the study consisted of AHAs, audiologists, DNs, OTs, pharmacists, PTs, SWs, SLPs and rehabilitation based nursing staff. Written informed consent was obtained from each participant prior to inclusion in the study. There were no other inclusion or exclusion criteria for the HPs to participate in this study.

4.3.3 Measures

A cross-sectional customised written questionnaire was used to obtain demographic and clinical information (age, gender, discipline and years of experience) and data on confidence and knowledge about communicating with PWA. The respondents' confidence when communicating with PWA was measured using a single horizontal 100mm VAS rating from "*Not at all confident"* (0 mm) to "*Very confident"* (100 mm). The reliability of this VAS rating was not investigated in the present study, although it has been used in prior studies in the field (Boonstra et al., 2008; Ushijima et al., 2006). It is also noteworthy that prior investigations of VAS' for assisting respondents to provide ratings of subjective constructs have reported evidence to support their reliability (Couper, Tourangeau, & Conrad, 2006; Huskisson, 1974; Wewers & Lowe, 1990). The investigators considered this VAS rating approach at the most appropriate for addressing the research aims regarding confidence, while minimising participant burden. The written questionnaire also included three open-ended questions asking what strategies could be used for providing information to PWA, how to obtain information from PWA and what strategies could be used to support a conversation with PWA. No examples were provided in the questions.

4.3.4 Procedure

Ethical clearance was obtained from the Metro South Health Human Research Ethics Committee and UQ MREC. HPs from multidisciplinary teams were recruited through departmental staff meetings across the hospital. A member of the research team attended departmental staff meetings to provide information about the study. The HPs were informed that their participation was voluntary and those who were interested in participating in the study were provided with a consent form and questionnaire. The data were collected from each individual using an open-ended questionnaire, which included the VAS confidence rating.

4.3.5 Data analysis

Conventional descriptive statistics were used to examine the demographic information of the participants. The VAS ratings for confidence of SLP HPs and non SLP HPs when communicating with PWA and the number of strategies reported by each group were examined using descriptive statistics (median, IQR). A Mann-Whitney U test was used to examine whether any difference in VAS ratings between SLP HPs and non SLP HPs was likely to be attributable to chance. The responses to the open-ended questions were grouped into four key overarching categories, based on prior research, to classify the strategies identified by the HPs (Cameron et al., 2015; Finch et al.,

2013). The four communication categories were physical gestures, verbal, visual and environment (Cameron et al., 2015; Finch et al., 2013). Two researchers independently grouped the strategy responses and then met with the team to discuss their findings and reach a unanimous decision. Additional independent researchers were available to intercede if there were any anomalies between the principal coders, however this was not needed as complete agreement was reached between the principal coders.

4.4 Results

The HPs from multidisciplinary teams consisted of n = 22 (24.4%) participants who had SLP university training and n = 68 (75.6%) participants from other HP disciplines. The gender distribution was markedly skewed with 80 females and 10 males completing the survey as per the typical gender distribution of allied HPs in Australia (Table 4.4.1). A Mann-Whitney U Test revealed a large difference in the confidence levels of non SLP HPs (median = 50.0mm, IQR = 39 – 62) and trained SLPs (median = 91.5mm, IQR = 78 – 100) reported on the confidence VAS ratings, U = 159.0, p <.001, 2-tailed (Figure 4.4.1). Further the non SLP HPs knowledge of strategies for communicating effectively with PWA was limited with a median of two strategies identified (IQR = 1 – 3), in contrast to the SLP trained HPs who identified a median of eight strategies (IQR = 7 – 12) to support communication with PWA.

The strategies reported by HPs were classified into four categories that included physical strategies, verbal communication strategies, use of visual information and utilising environmental changes are reported in Table 4.4.2. Some strategies proposed to be of use included pointing, giving adequate time to respond, using yes/no questions, writing down key words and engaging familiar conversation partners (e.g. family, carers or SLPs).

4.5 Discussion

The present study indicated that non SLP HPs were less confident and did not have an extensive range of strategies to draw upon to enhance their interactions with PWA. It was assumed by the authors that the SLPs received specialist training in communication strategies for people with a range of communication disorders including aphasia, as part of their university qualification(s). Interestingly, the SLPs in the current study, although considerably more confident, still reported some anxieties and challenges. This seemed particularly true for SLPs who had relatively infrequent interactions with PWA due to the nature of their caseloads (e.g. SLPs who did not typically work in an acute setting with patients that have neurological disorders or subacute neurorehabilitation units). This may have prompted self-questioning related to the adequacy of their skills and strategies to communicate effectively. The current study therefore provides useful data which supports the viewpoint that there is likely to be a need for appropriate communication training for a range of HPs

working in settings where clinical encounters with patients with communication difficulties are likely, with a specific focus on a metropolitan hospital setting.

To date, barriers to communication with PWA that have been identified within a healthcare setting have included caseload and time pressures, environmental constraints and reduced knowledge of useful resources or strategies to employ (Chant, Jenkinson, Randle, & Russell, 2002; Dean, 2014; Horton et al., 2016b). These factors may contribute to the lower confidence perceived by HPs. The difference in reported confidence for interacting with PWA between SLPs and other HPs is consistent with previous studies of HP students in which non SLP students did not receive specific aphasia-related communication training during their coursework or have experience with PWA during clinical placements, and subsequently did not feel adequately prepared to confidently engage in successful communication interactions with PWA or other communication difficulties (Cameron et al., 2015; Finch et al., 2013; Hill et al., 2010). Previous studies have used CPT programs with HPs, students, family members and volunteers with the results indicating a positive effect. It was identified that the ability of medical students to initiate conversation, build rapport and obtain relevant information following CPT training was notably improved (Legg et al., 2005). Similarly, an intervention study conducted with HPs from multidisciplinary teams in a Canadian hospital, which included CPT, post-training support and follow-up, resulted in increased awareness of aphasia and relevant management strategies (Simmons-Mackie et al., 2011). Recently, Horton et al. (2016b) trained 28 HPs from multidisciplinary teams (nurses, PTs, OTs, SLPs, AHAs, associate professionals and non-clinical administration) in CPT and investigated the transfer of training principles into clinical practice within a post-acute stroke rehabilitation context. They found that the majority of the HPs trained reported improved communication practices and increased confidence for interacting with PWA. These targeted training programs have been found to not only increase confidence and knowledge, but also positively influence communication access in other healthcare settings (Cameron et al., 2015; Finch et al., 2013; Pound et al., 2007). A key feature of CPT is that it not only provides education to increase knowledge of aphasia and communication strategies but it also provides opportunities for practicing communicating with PWA (Simmons-Mackie et al., 2011).

4.5.1 Strengths and limitations

The study sample was drawn from HPs in a single Australian metropolitan setting and therefore the results may not generalise to rural Australian areas or to health systems with dissimilar HPs. The method of data collection was self-report questions and thus, this study represents HPs' perceptions, but not necessarily their actual communication ability in a real-life clinical interaction. However, using this method enabled the collection of both quantitative and qualitative data from a broad cross section of HPs. A limitation of the study was that it did not specifically investigate the

reliability of questions, including the confidence VAS, among this sample. However, given that the types of questions used in this study have been successfully used in previous studies (Cameron et al., 2015; Finch et al., 2013), the authors are not aware of any indication that the questions in this study were unreliable. Perhaps a more challenging, but potentially valuable, alternative method of data collection on this topic would have been to survey or interview PWA themselves about their experiences of interactions with HPs (see, for example, Armstrong et al., 2015); however, patient perceptions were considered beyond the scope of the present study. This study does provide evidence to indicate that both SLP and non SLP clinicians may potentially find training in how to facilitate communication with PWA useful. The current study also captures clinicians across a range of professions within multidisciplinary teams in hospital settings, which includes individuals with both specialised communication training and no previous specialised training.

4.5.2 Implications for practice

The findings from this study suggest there is scope to improve the confidence and knowledge of HPs regarding communication with PWA. The aforementioned range of communication promoting therapy approaches and CPT targeted at HPs offer promising solutions to overcome low levels of confidence and knowledge of strategies for communicating with PWA. The authors of the present study consider it likely the benefits identified in previous research from these communication facilitating approaches, could be extended to HP patient interactions in both acute and rehabilitation settings (Kagan, 1998; Legg et al., 2005; Rayner & Marshall, 2003; Turner & Whitworth, 2006). Minimising anxiety and reducing the instances of avoiding interactions with PWA could be a positive outcome of providing HPs with timely aphasia-related communication training to ensure patient-centred care is maintained (Finch et al., 2013). The ultimate impact of this may be to increase the involvement of PWA in decisions about their own healthcare.

4.5.3 Future research

The present study has identified an opportunity for improving hospital-based HP's aphasia-related knowledge and confidence and identified potential communication promoting approaches from research literature in the field. However, a larger study involving multiple hospital sites is needed to examine whether comparable benefits observed from these communication promoting strategies (e.g. CPT) are yielded when implemented among hospital-based HPs. Further it may be valuable to identify and evaluate opportunities to better equip HPs for communication with PWA during their entry level training. It may also be worthwhile investigating whether HPs identify any negative implications related to job satisfaction or patient outcomes as a result of reduced confidence and knowledge of effective communication strategies when interacting with PWA. There is currently a greater emphasis on CPT within community settings than in hospital contexts (Simmons-Mackie et al., 2010). Therefore, investigation is needed into the scope, breadth and

relevancy of CPT to ascertain if it affects real change in terms of confidence, knowledge and efficacious conversations between HPs and PWA in a hospital setting; which is often the primary point of contact after the onset of stroke (Finch et al., 2013; Heaven, Clegg, & Maguire, 2006; Horton et al., 2016b; Simmons-Mackie et al., 2010). Research in the field has also focussed on students (both SLP and non SLP), volunteers and families but there has been less investigation into quantifying the effects of the training on PWA. Subsequently, another area worth further investigation is the impact of using PWA as the key trainers in a CPT program and what the implications that may have to the person with aphasia in terms of revealing competence, use of strategies and skills when communicating with HPs and engagement within the healthcare context. It would also be of interest to investigate differences in strategy choice and ongoing use, according to experience and discipline.

4.6 Conclusion

HPs frequently reported diminished levels of confidence and knowledge of few strategies for communication with PWA. Formal training of HPs with low levels of confidence and ability to communicate with PWA may remedy this situation, but there have been few intervention studies in hospital settings to improve the ability of HPs to communicate with PWA using PWA. This is a promising area for research as improving the interactions between HPs and PWA in hospital settings may ultimately increase the participation of PWA in healthcare decisions and facilitate the adoption of patient-centred care for this patient cohort.

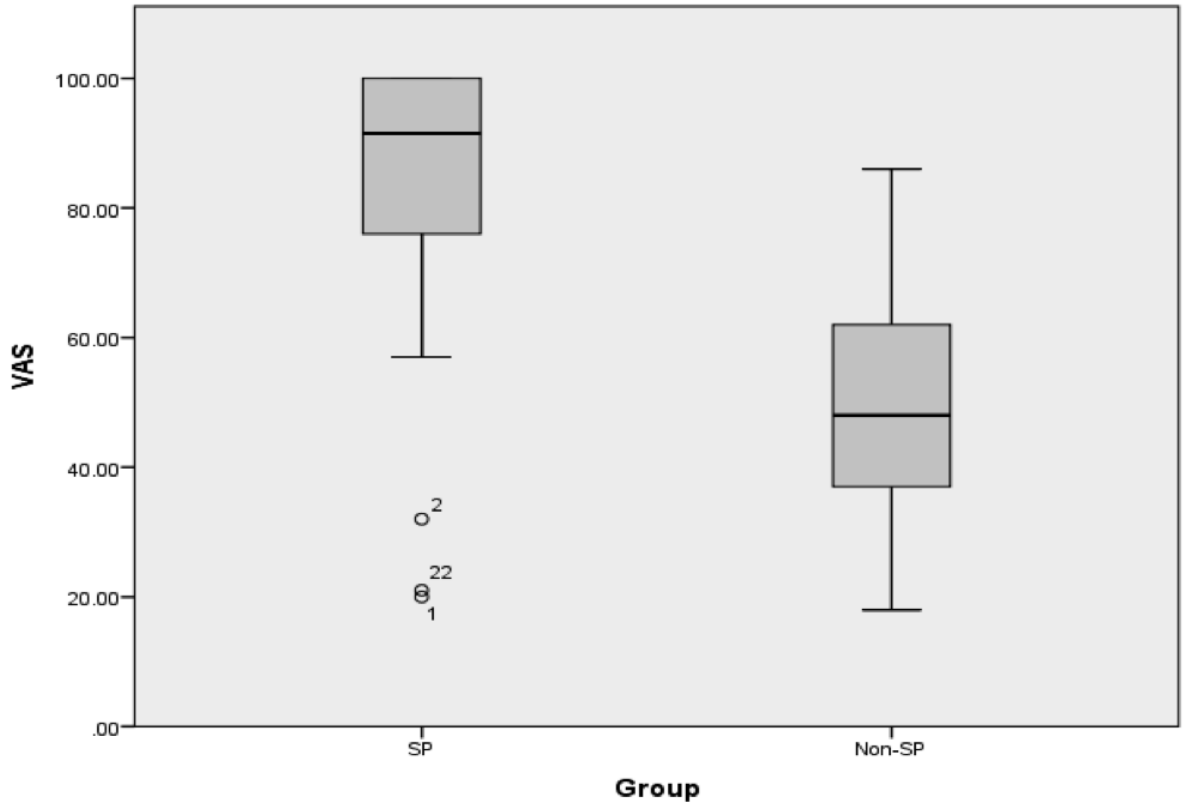


Figure 4.4.1

Confidence rating of HPs on the VAS.

Table 4.4.1

Demographic information of HPs

Characteristics	Participants	
Discipline	SLPs (*n* = 22)	non SLP HPs (*n* = 68)
Females	22	58
Males	0	10
Age, years, median (IQR)	28 (24–39)	33.5 (27–47.5)
Years experiences, median (IQR)	5 (1.5–17)	10.5 (3–20)

Table 4.4.2

Strategies proposed by HPs for communicating with PWA

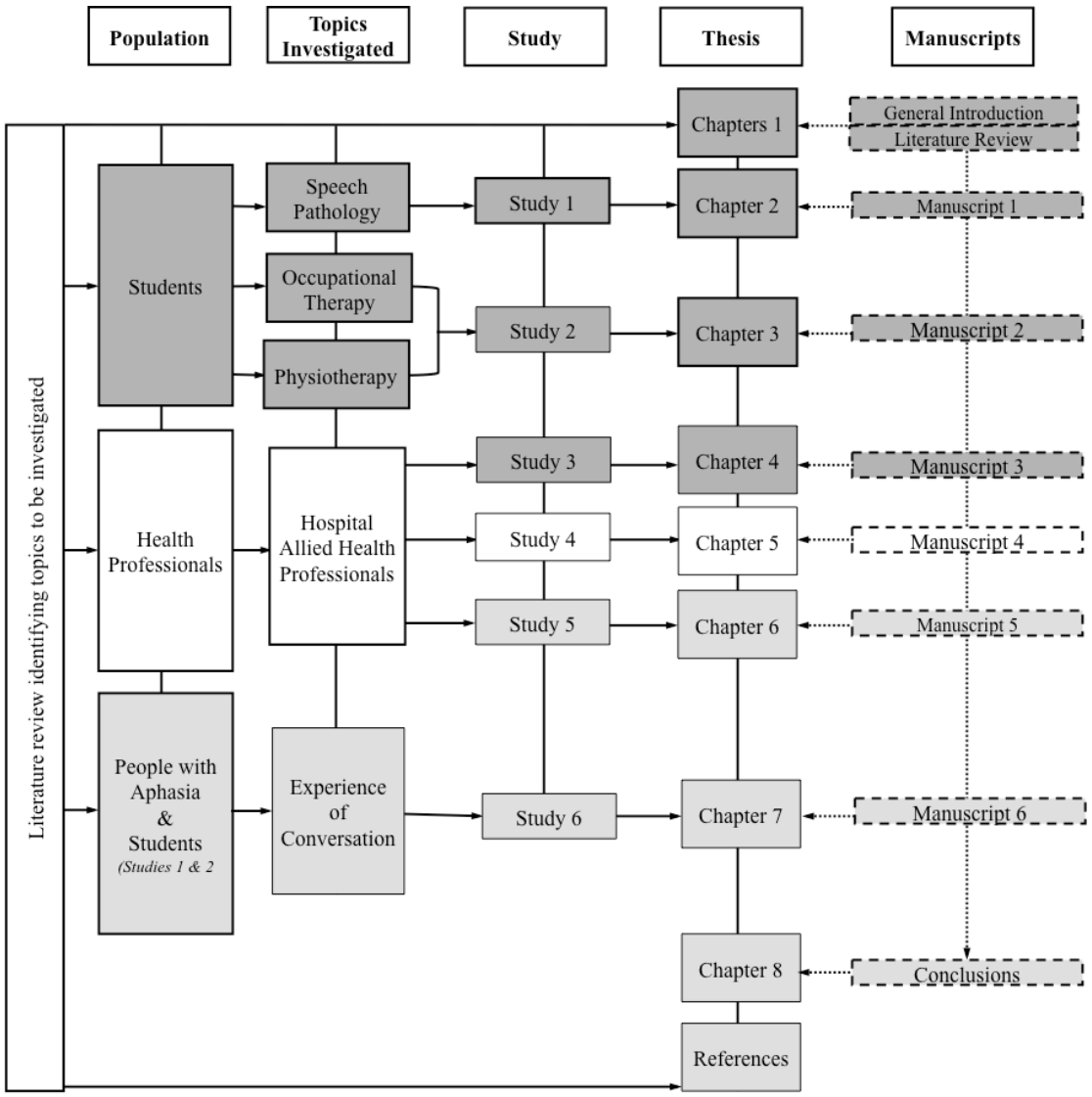
Themes	Strategy	Frequency of Response	
		SLP	Non SLP
Physical Gesture	Visual cues (gesture, pointing, demonstration, objects)	24	19
	Minimal encouragers (e.g. nodding, smiling)	5	-
	Body language (e.g. eye contact, arms open)	16	19
Verbal	Allowing the PWA time to respond	9	-
	Slow down speech rate	12	5
	Use key words	7	3
	Yes / no questions	15	24
	Prompts	4	-
	Provide choice (forced choice, multiple choice)	3	2
	One (or more) stage commands	2	3
	Keep message short / concrete	1	-
	Check for understanding / summaries	6	-
	Repetition	7	-
Visual	Pen and paper / whiteboard	15	16
	Write down key words / message	3	-
	Communication boards (pictures / alphabet / scales)	14	24
	Electronic devices	-	4
	Modified information (i.e. aphasia friendly)	4	2
Environment	Family / Carer / Friends	1	3
	SLP	5	25
	Allied Health Assistant / Recreational Officer	-	1

CHAPTER 5

A pre-post intervention study investigating the confidence and knowledge of health professionals communicating with people with aphasia in a metropolitan hospital.

Chapter 4 identified that non SLP HPs would benefit from CPT to augment their current confidence and skills within their workplace. Interestingly, although reporting a high level of confidence and knowledge of skill (as anticipated), SLPs still identified areas of perceived anxiety and challenges when engaging with PWA. These findings suggest that CPT could potentially be beneficial for all HP disciplines, with possible nuanced information targeted at discipline specific needs.

Chapter 5 follows on from the preliminary findings in Chapter 4 and presents the pre-post findings of delivering face-to-face CPT with 52 HPs in a tertiary hospital setting**.** The following manuscript is entitled "A pre-post intervention study investigating the confidence and knowledge of health professionals communicating with people with aphasia in a metropolitan hospital." was published in *Aphasiology*, 2017, *31*(3), 1-16. This manuscript is inserted as published, with the exception of formatting (for details, please refer page viii). Abbreviations are not re-defined in this chapter (please refer page xxix). All references have been combined and are presented in a single reference list at the end of this thesis (pages 124-140).


Population
Topics Investigated
Study
Thesis
Manuscripts
Literature review identifying topics to be investigated
Students
Health Professionals
People with Aphasia & Students
(Studies 1 & 2
Speech Pathology
Occupational Therapy
Physiotherapy
Hospital Allied Health Professionals
Experience of Conversation
Study 1
Study 2
Study 3
Study 4
Study 5
Study 6
Chapters 1
Chapter 2
Chapter 3
Chapter 4
Chapter 5
Chapter 6
Chapter 7
Chapter 8
References
General Introduction
Literature Review
Manuscript 1
Manuscript 2
Manuscript 3
Manuscript 4
Manuscript 5
Manuscript 6
Conclusions

A pre-post intervention study investigating the confidence and knowledge of health professionals communicating with people with aphasia in a metropolitan hospital.

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5.1 Abstract

Background: CPT is a social intervention approach that can be used to educate and train volunteers, family members, significant others and professionals, in addition to providing skills and strategies for PWA. This body of research extends the current research in the area by implementing CPT with HPs in using PWA as trainers in a sub-acute care setting; previous research in acute has primarily focussed on caregivers and volunteers in a community setting.

Aims: The aim of this study was to investigate implementing a CPT program in an Australian metropolitan hospital by training professionals and utilising PWA as a key component of the training to facilitate real time practical skill acquisition.

Method*:* 52 HPs from multidisciplinary teams (AHAs, audiology, DN, OT, pharmacy, PT, SW and nursing staff in a rehabilitation unit) participated in a pre-post intervention study. HPs completed a questionnaire to collect demographic information, identify current knowledge of aphasia-related communication strategies and ascertain their confidence levels (using a 100mm VAS) related to interacting with people with communication impairments and list any strategies/resources that could be used as an adjunct to facilitate exchanges with PWA. These open-ended responses were categorised into four main groups using content analysis. The CPT component, adapted from two programs run by Connect – The Communication Disability Network in the United Kingdom, consisted of an educational lecture on communicating with PWA given by an SLP and a practical conversation with a person with aphasia. The PWA provided "expert" practical feedback to the professionals participating in the training.

Results: HPs reported mean confidence levels of 46.56mm (SD = 15.71) prior to training and 75.81mm (SD = 12.16) post training, $t(51) = 12.479$ ($p < .001$). More HPs were able to identify relevant strategies to assist with communication following the training (median total responses = 52, IQR = 50–52), than prior to the training (median total responses = 15, IQR = 9–38).

Conclusion: The results provide preliminary evidence to suggest that a CPT program may be an effective method to increase the confidence and knowledge of communication strategies of HPs, in an acute care setting, when interacting with PWA.

5.2 Introduction

Aphasia has been estimated to affect approximately one third of initial stroke survivors with an estimated 440, 000 Australians living with the effects of stroke in 2015 (Disability Policy and Research Working Group, 2011; Frattali, 2013; Stroke Foundation, 2015; Parliament of Australia - Centre for Clinical Research Excellence Aphasia Rehabilitation, 2014). People are often unaware of the cognitive and social competence of PWA. As such, communication difficulties associated with aphasia can create significant barriers to the involvement of PWA in their medical management and rehabilitation (Parr, 2007; Ross et al., 2006; Simmons-Mackie & Damico, 2007). An inability to converse effectively with others can cause PWA to be perceived as incapable of independent decision making and consequently, the choices HPs or caregivers make on behalf of a person with aphasia may not reflect their wants or needs (Kagan, 1995; Le Dorze, & Brassard, 1995; Pound et al., 2007).

Previous studies have found that there are often infrequent attempts by healthcare providers to engage PWA in conversation (Olofsson, Anderson, & Carlberg, 2005; Parr, 2004; Sundin & Jansson, 2003). In a study by Parr (2004), it was found that PWA (severe) participated minimally in various activities requiring verbal and written communication due to lack of awareness and supports by their communication partner. Similarly, PWA in an acute hospital setting expressed concerns regarding inadequate information relating to stroke and aphasia to assist in understanding their current levels of reduced function and associated difficulties (Lomer & McLellan, 1987; Wellwood, Dennis, & Warlow, 1994). As reported by Kagan (1998), HPs have the capacity to significantly reduce barriers to communicative access for PWA with increased understanding and tools to facilitate engagement. Preliminary research by the investigators of the present study indicated trained HPs who were not SLPs had lower levels of confidence and knowledge of strategies to enhance communication with PWA than professionals who had received explicit communication training (e.g., SLPs) (Cameron et al., 2015; Finch et al., 2013). Previous research has demonstrated that supported conversation techniques, employed by trained communication partners (e.g., volunteers, familiar partners, HPs), can help to overcome communication barriers, promote re-engagement in decision making (everyday life and healthcare) and empower PWA to use their intact cognitive and social skills to participate in conversations (Stroke Foundation, 2010; Simmons-Mackie et al., 2010; Turner & Whitworth, 2006).

There has been a growing body of research investigating CPT and its application to various settings and individuals to facilitate communicative interactions between people who have communication difficulties and their respective communication partners (Connect – The Communication Disability Network, 2013; Kagan, 1998; Legg et al., 2005; Lyon et al., 1997; Simmons-Mackie et al., 2010; Turner & Whitworth, 2006). CPT expands communication

opportunities for PWA and provides strategies to both PWA and their communication partners (e.g., HPs) to support effective communication exchange (Horton et al., 2016b; Simmons-Mackie et al., 2010). It can be adapted to the setting as required via dyad-focussed interventions, practical workshops, general education sessions and/or whatever model is deemed most appropriate for participants to be trained (Horton et al., 2016b; Simmons-Mackie, 2014). A systematic review conducted by Simmons-Mackie and colleagues (2010) concluded that CPT could be beneficial and effective approach for improving participation and communication activities of PWA when interacting with trained partners. The review considered the impact of CPT on language, activity and involvement, psychosocial regulation and QoL outcomes for both PWA and their communication partners. Although identifying CPT as a favourable strategy for improving interactions for people with chronic aphasia, the results were inconclusive as to the impact on PWA in the acute-stage or related to language impairment, psychosocial enhancement and QoL measures (Simmons-Mackie et al., 2010).

SCA™ is a widely regarded practical CPT approach that equips communication partners with skills to support PWA to think independently and communicate via conversation (Kagan, 1998). SCA™ originated in Canada at the Aphasia Institute in Toronto and has been extensively published and applied to many settings worldwide (e.g. with trained volunteers in community, trained healthcare providers in private and public practice). Overall, studies have demonstrated that increased active participation by PWA in conversation can be observed when interacting with trained volunteers who employ the SCA™ principles (Kagan et al., 2004; Rayner & Marshall, 2003). Connect – The Communication Disability Network based in the United Kingdom, developed another highly regarded program, which employs the concepts of SCA™ within a 'train the trainer' framework, as it uses the PWA as trainers and assessors of conversational skills (Connect – The Communication Disability Network, 2013). The face-to-face experiential training provided by the "experts" (PWA) has resulted in positive outcomes (e.g. freedom to practice without extraneous pressures of a clinical environment, refining language choice and awareness of different strategies and how to use them) for SLPs, volunteers, HPs, students and community service employees who have participated in Connect's CPT program (Connect – The Communication Disability Network, 2007, 2011, 2013; Cameron et al., 2015; Finch et al., 2013). Explicit communication training programs have been found to not only increase confidence and knowledge, but also have a follow on effect to communicative access in a range of healthcare settings (Cameron et al., 2015; Finch et al., 2013; Pound et al., 2007). As with most skills, repeated experience rooted in foundational knowledge results in higher levels of associated confidence and more favourable outcomes (Lupu et al., 2012). Encouragingly, as per the UK stroke guidelines it is mandatory for clinical stroke staff to receive specialised communication training to enhance their clinical practice (Swart & Horton,

2015; National Institute for Health & Clinical Excellence - NICE, 2013). In Australia the Stroke Foundation and the Centre for Clinical Research Excellence in Aphasia Rehabilitation (CCRE) have determined the best practice guidelines for stroke rehabilitation management (CCRE, 2014; Stroke Foundation, 2010). The Stroke Foundation guidelines state that communication partners (e.g. carers/family) should be provided with training to minimise environmental barriers facing PWA (Stroke Foundation, 2010). Similarly, the Australian Aphasia Rehabilitation Pathway best practice guidelines (based on Simmons-Mackie et al. 2010 recommendations) suggest that SLPs should provide training to families/carers to enable them to become skilled conversation partners (CCRE), 2014). It also asserts that to improve the communication environment for a PWA, aphasia rehabilitation should include CPT for frequent communication partners. As per the pathway document, CPT and communication partners are defined as "an intervention directed at people other than the PWA with the intent of improving the language, communication, participation and/or wellbeing of the PWA. Communication partners are people in the environment with whom the PWA might interact, including but not limited to family members, friends, volunteers or healthcare providers." (CCRE, 2014, p. 41 – 42). This does highlight the gap in current recommendations for training to be specifically and regularly provided to HPs.

Research has demonstrated that volunteers and family members have improved interactions with PWA following involvement in a CPT program (Cameron et al., 2015; Finch et al., 2013; Kagan et al., 2001; Rayner & Marshall, 2003; Turner & Whitworth, 2006). To date, research into CPT has largely focussed on community environments and further enquiry is needed to ascertain if the related benefits can be translated into routine clinical practice in hospital settings (Simmons-Mackie et al., 2010). Investigators of the present study propose that the positive effects CPT has on communication access for both PWA and trained communication partners could be successfully and efficiently translated into healthcare settings. A study by Legg et al. (2005) provided CPT training to a group of sixth-year medical students to assist them in obtaining a case history from PWA. The results of that study identified significant improvement among students who received CPT training who were able to use effective strategies to establish rapport and gain information during interactions with PWA (Legg et al., 2005).

Similarly, research conducted with HPs from multidisciplinary teams in a Canadian hospital setting (which included CPT, post-training support and follow-up) identified increased awareness of aphasia and relevant management strategies (Simmons-Mackie et al., 2007). The *"Communicate Access Improvement Project"* investigated improved decision-making and communication access for PWA in the acute, rehabilitation and long-term care contexts. This involved HPs attending a two day training course, developing specific access goals and materials for communication and follow-up/support from an SLP (Simmons-Mackie et al., 2007). The outcomes were evaluated via

qualitative data collected from observation, focus groups and open-ended interviews. The findings indicated an increase in knowledge and facilitating engagement for PWA. It was also identified different barriers and facilitators of system change as per the healthcare setting. McGilton et al. (2011) investigated facilitating successful patient-nursing staff interaction opportunities within a continuing care stroke unit. The study reviewed *"Patient-Centred Communication Intervention"* which involved nursing staff implementing a communication care plan identifying the perceptions of nursing staff and patients related to care and psychosocial functioning when interacting on the ward and capturing the knowledge and thoughts of nursing staff associated with patient communication (McGilton et al., 2011). Seven nurses participated in this pre-post study. They were required to implement communication plans for patients (developed by an SLP), attend a workshop about communication and behavioural strategies, implement a support system to assist nurses using the plans (across 2 month period) and participate in a focus group. The pilot study concluded that a tailored approach to communication education is necessary for operational changes to occur (McGilton et al., 2011).

Recently, Horton et al. (2016b) trained 28 HPs (nurses, PTs, OTs, SLPs, AHAs, associate professionals and non-clinical administration) in supported communication (SC) and investigated the transfer of training principles into clinical practice within a post-acute stroke rehabilitation context. The training was designed to increase PWA participation by improving the knowledge and skills of their communication partners. The findings of that study indicated that a majority of the HPs trained reported improved communication practices, and increased confidence for interacting with PWA, however the translation of training into practice has many complexities (Horton et al., 2016b). This body of research aims to extend the current research in the area (Horton et al., 2016b; McGilton et al., 2011; Simmons-Mackie (2007) by investigating the benefits of using PWA as the trainers when implementing CPT with HPs in an acute cute setting. It is postulated, that by using PWA as trainers it not only provides empowerment and an opportunity for "expert" knowledge transfer but increases the relevancy of the training for an acute setting; as the needs of PWA in this setting are different to those needed in a community context.

Improved psychosocial status in PWA was also found in a study by McVicker et al. (2009), which trained volunteers as conversation partners for PWA with reduced access to community services. The PWA were given a questionnaire post training to capture their experiences, and the results indicated increased QoL and social participation (McVicker et al., 2009). According to several researchers (Booth & Swabey, 1999; Cunningham & Ward, 2003; Simmons-Mackie, Kearns, & Potechin, 2005; Turner & Whitworth, 2006), training conversational partners may not only enhance interactions between PWA and conversation partners, but also result in reduced

interruptions, improved comprehension and accuracy of information being communicated and generalisation of supportive conversation strategies to untrained contexts.

To date, research into CPT has largely focussed on community environments and further enquiry is needed to ascertain if the related benefits can be translated into routine clinical practice in hospital settings (Simmons-Mackie et al., 2010). This body of research extends the current research in the area by implementing CPT with HPs in an acute care setting, as previous research has primarily focussed on caregivers and volunteers in a community setting. Investigators of the present study propose that the positive effects CPT has on communication access for both PWA and trained communication partners could be successfully and efficiently translated into healthcare settings. It is important to capture and evaluate the use of CPT by HPs with PWA in an acute setting. The needs for both the HPs and PWA are different in this acute setting compared to community; with acute care largely focussed on immediate education, communicating wants/needs within the ward environment and commencing rehabilitation planning. HPs in this setting are often under time pressured deadlines and need to complete baseline assessments to formulate their working hypothesis, for the PWA ongoing likely trajectory and subsequent needs. It is the opinion of the authors, that including acute care HPs in training is invaluable, to ensure efficient and efficacious interactions with PWA at this initial stage to facilitate optimised patient care and engagement. The aim of the present study was to investigate the effects of implementing a CPT program with PWA and HPs from multidisciplinary teams in an Australian metropolitan hospital on knowledge of HPs' aphasia communication strategies, and their confidence in communicating with PWA. It was hypothesised that HPs would demonstrate improved knowledge and greater confidence after completing the CPT education program.

5.3 Method

5.3.1 Design

A pre-post intervention study was implemented using a quasi experimental design (Portney & Watkins, 2009).

5.3.2 Setting and participants

Participants included a convenience sample of 52 HPs from a single metropolitan hospital working from a range of health disciplines (AHAs, audiology, DN, OT, pharmacy, PT, SW and nursing staff in a rehabilitation unit). These health disciplines were identified as the key group of individuals currently interacting with PWA in the acute hospital setting at this facility. As this study was supported by a grant, the number of participants the authors had stipulated was approximately 40 HPs based on sample size calculations. The authors had aimed for 40 participants to allow for drop out however all 52 HPs completed the program. There were nil other inclusion or exclusion criteria for the HPs to participate in this study.

Ten PWA (five females, five males) contributed to the education program for HPs. They were between 2 and 6 years post stroke (mean = 3.4 years) and had a median age of 64 years (IQR = 59-69 years). The level of aphasia severity was determined using an AQ score on the WAB, which provides a clinical description of the impairment level of function (Kertesz, 1982). Nine PWA had an AQ score between 42.8 (moderately severe) and 81.8 (mild), with an average AQ of 62.5 (mild-moderate). The remaining person with aphasia had a global aphasia with significant verbal dyspraxia and was unable to be assessed via the WAB. All PWA had previously participated in 12 hours of training adapted from *"Running A Conversation Partner Scheme"* (Connect – The Communication Disability Network, 2011) over a six week period. The course provided the PWA with information regarding communication strategies, and how to provide structured feedback to conversation partners using an evaluation tool.

5.3.3 Measures

Demographic (age, gender) and clinical experience (discipline, years of experience) information was collected from the participants (see Table 5.3.3.1). The gender balance was skewed as expected based on typical gender distribution of allied HPs, with more females than males. Participants' knowledge of aphasia and strategies for effective communication were assessed using open-ended questions. The participants were also asked about their knowledge of aphasia and supportive conversation strategies and potential resources to use with PWA. A 100mm VAS where 0mm represented *"Not at all confident"* and 100mm represented *"Very confident"* was used to assess participants' levels of communication confidence. The entire training program, including pre and post measures, was performed within the same period of time and as such the HPs did not have an opportunity to integrate their newly acquired skills into their daily work practices prior to post assessment measures being conducted; thus allowing assessment of the direct impact of the CPT program.

5.3.4 Procedure

Ethical clearance was obtained from the local hospital and university human research ethics committees. HP participants were recruited through departmental staff meetings, following an email to the heads of all the departments that was disseminated to their staff members. Once the HPs had indicated their interest in participating in the study, they were contacted with further information. Written informed consent was obtained from each participant prior to inclusion in the study. After completing the baseline pre-rating of communication confidence, all participants completed the CPT (the intervention program) based on the Connect – The Communication Disability Network *"Making Communication Access a Reality"* and *"Running a Communication Partner Scheme"* programs (2007, 2011, 2013) and SCA™ (Kagan et al., 2001). The intervention program consisted of a one hour lecture that discussed strategies for communicating effectively with PWA. This

lecture was provided by an SLP member of the research team (AC). This was immediately followed by a 15 to 20 minute practical conversation with a PWA (single or dyad groupings based on the severity of aphasia) to facilitate application of the discussed strategies and approaches. Communication ramps such as pens and paper, newspapers, maps and pictorial supports were also provided. None of the PWA involved in this study had an AAC device or communication book. Following the conversations, the PWA provided feedback to the HPs using an evaluation tool from Connect – The Communication Disability Network *"Running a Communication Partner Scheme"* program (2011). The evaluation tool consisted of 11 questions with related pictures, a rating scale (poor to excellent) and yes/no questions. The questions were as follows – Was the conversation comfortable and relaxed? Did your communication partner listen and pay attention? Did your communication partner write down key words? Did your communication partner keep the conversation moving? Was it balanced and equal? How was the speed of conversation (too fast, just right, too slow)? Was the conversation interesting? Did your communication partner ask if clear? Did the communication partner use resources? Overall how good was the conversation for you? Think about their good points, and one-to-two things to change (refer to Connect – The Communication Disability Network, 2013 for more information). The PWA used the feedback evaluation tool to structure and augment their comments to the HPs about their conversation skills, use of strategies and potential areas for improvement. During the post-intervention assessment, which proceeded the feedback session with the PWA, participants were again required to rate their confidence when communicating with PWA using the same VAS and answer the same open-ended questions about their knowledge of strategies for effective communication with PWA. HP participants did not have an opportunity to implement their newly acquired skills within their work practice until following the completion of the entire CPT program (pre-intervention, conversation/feedback, post intervention), which was all completed within a two hour period.

5.3.5 Data analysis

The demographic and clinical characteristics of participants were described using conventional descriptive statistics. Content analysis (Marks & Yardley, 2004; Patton, 2002) was used to categorise the types of strategies reported by HP participants. This was completed by three SLP members of the research team (A.C., E.F., J.L. – each with more than six years clinical experience) and based on four overarching groups described in our preliminary research (Cameron et al., 2015; Finch et al., 2013) which included: physical strategies (e.g., gestures, minimal encouragers), verbal communication strategies (e.g., yes/no questions, clarifying and rephrasing), use of visual information (e.g., key words, communication book) and utilising environmental changes (e.g., family/friends, setting) (see Table 5.3.5.1). The frequencies relating to confidence for communicating with PWA and knowledge of aphasia were described using central tendencies

(mean and SD). To examine whether differences existed between the pre-intervention and post-intervention assessment, a paired t-test for VAS ratings and descriptive statistics (median and IQR) for strategies were used.

5.4 Results

The sample included n = 47 (90%) females with a median age of 31 years (IQR = 26–45) and a median of 6.5 years (IQR = 3–15.3) experience (see Table 5.3.3.1). The participants reported a mean VAS rating of 75.8 mm (SD = 12.2) after completing the training. This was higher than the mean self-reported confidence of 46.6 mm (SD = 15.7) before completing the training, $t(51) = 12.479$ ($p < .001$) (see Figure 5.4.1). At the pre-intervention assessment, participants identified a median of three strategies for facilitating communication with PWA. Following the training, the HPs were able to identify a total of 35 strategies across the areas of body movement, alternative verbal output, visually salient items and environmental modifications (see Table 5.3.5.1). There were some differences regarding the types of strategies reported on pre-post measures, which indicated improved awareness and application of skills learnt through the CPT program. These included refined and targeted selections of relevant strategies to facilitate conversation and effective information gathering with the PWA. Prior to the training, HPs tended to identify contacting an SLP for guidance and talking to family members or significant others for information (environmental modifications) as the main strategy. They also reported using pictures (visually salient items) to support the information or assist with a question they wanted to answer and using gesture (body movement). Overall HPs post intervention were able to identify using gesture (body movement), written key words and pictures, scales or objects (visually salient items) as well as an increased appreciation of question use (open-ended, yes/no, closed), rephrasing questions and checking for understanding, using simple language and allowing sufficient time for the PWA to respond (alternative verbal output) as supports. Encouragingly, after the training, HPs verbally reported an increased awareness of identifying the communication partnership as a shared responsibility and the importance of acknowledging attempts to communicate (regardless of their success).

5.5 Discussion

The findings of this study suggest that CPT with community dwelling hospital outpatients with aphasia may be beneficial for increasing confidence and knowledge of communication strategies of HPs in a hospital setting. However, the corresponding improvement in knowledge indicates that the improvement in confidence was likely to be genuine and associated with enhanced knowledge of communication strategies rather than purely a scale recalibration or measurement artefact attributable to the response shift phenomenon (Granier, Green & Armenakis, 1991; McPhail, Beller, & Haines, 2010; McPhail & Haines, 2010).

The findings from this study are consistent with and complement previous research that has demonstrated the benefits of CPT programs on knowledge and confidence for communicating with PWA in other contexts (Kagan et al., 2001; Legg et al., 2005; Rayner & Marshall, 2003; Turner & Whitworth, 2006) and support the notion that CPT programs could be successfully integrated into hospital settings. For example, Kagan and colleagues identified that the inherent competence of PWA could be revealed via conversations with skilled conversation partners, with trained volunteers demonstrating significantly greater ability to facilitate conversation with PWA than untrained volunteers (Kagan et al., 2001). A study investigating conversational analysis between nursing staff and PWA reported that the staff had a tendency to control conversations and create asymmetry in their interactions due to reduced confidence with interacting with an individual with communication difficulties and reduced awareness of their inherent (preserved) competence (Gordon, Ellis-Hill, & Ashburn, 2009).

Conversations are a collaboration between two or more people and often PWA utilise a range of strategies to communicate their intended meaning dependent on the context in which conversation occurs (Goodwin, 1995; Gordon, et al., 2009; Wilkinson, 1991). The impact of real time interactions with PWA as part of the CPT was considered a key, salient feature of the training that added to the experience of participants and is likely to have contributed to HPs improved ability to identify effective and relevant communication strategies (Skilton, 2011). Supportive communication strategies that have been integrated into communication exchanges following CPT in prior research have included multi-modal communication (writing, pictures and gesture), facilitating comprehension through clarification, repetition and pauses, asking open-ended questions and using short sentences, key words, active listening skills, awareness of topic maintenance, relevance of included information and clear initiation of topic changes (Simmons-Mackie et al., 2010).

5.5.1 Strengths and limitations

There are several strengths and limitations associated with this study methodology and context. First, the empirical data for this study was generated from a one hour lecture and 15 to 20 minute conversation at a single metropolitan hospital facility. Therefore it can only be asserted that in this study, CPT increased the confidence and knowledge of HPs. Thus, this limits the generalisability of the study findings and highlighting the need for further replication of this study at other facilities, to provide evidence that CPT is successful for increasing HPs' confidence and knowledge for interacting with PWA in this setting. Additionally, a follow-up questionnaire would have also provided a means to capture practice change and uptake following the CPT program within a real world clinical setting. It may be considered a strength that the sample included experienced HPs from relevant professional backgrounds, and with prior clinical experience

directly from a hospital facility to add to the literature in this field. However, the inclusion of a single metropolitan hospital facility may limit the ability to extrapolate findings to dissimilar clinical settings and HPs. Given that this was a sample of experienced clinicians who were likely to have had already had prior clinical encounters with PWA, this magnitude of increased knowledge was surprising; prompting further questions as to whether this is a short or long-term change. Furthermore, its possible that a different magnitude of change in self-reported confidence might be reported by less experienced clinicians. Some caution is warranted when interpreting this self-reported improvement in confidence in this pre-post education study due to the absence of a comparator group. Second, it may be considered a strength that the study included both self-reported confidence ratings and a requirement to objectively list potential communication strategies. This enabled the investigators to gain insight from the perspective of the participant (in terms of their confidence) and actual changes in knowledge of communication strategies. On the other hand, the absence of direct observation of trainees in their own subsequent clinical practice to observe whether or not learned strategies were effectively translated into true clinical encounters was beyond the scope of the study and remains a priority for future research; as self-report may not be accurately representative of translational practice within the day-to-day clinical setting. The content and type of communication tasks used in the training is also a future consideration that requires ongoing exploration, as it can be posited that multiple conversations may enhance learning and afford more generalisability of skills into practice. Future research could also evaluate whether the increased confidence or knowledge gained during the program translates into interactions with multiple different PWA during everyday clinical settings.

A larger scale investigation of CPT with HPs using a randomised controlled trial design would be valuable to inform ongoing healthcare training, delivery and service models in this field. The presence of a comparator group randomised to receive a "placebo" education intervention in the present study would have enabled a causal relationship between CPT and changes in confidence and knowledge to be established. Nonetheless, in the absence of any other likely mechanism for the participants to have gained knowledge of communication strategies between the pre-intervention and post-intervention assessments, it is plausible that the observed improvements in knowledge of communication strategies can be attributed to the training received.

5.5.2 Implications for practice

The primary implication from the present study, which extends upon previous research in the field, is that training HPs in successful communication strategies could enable improved engagement with PWA in their clinical interactions within an acute, sub-acute and rehabilitation hospital context. This study specifically identifies that community dwelling hospital outpatients with aphasia can be effective trainers to use with HPs within a hospital-based setting. Barriers to

participation in healthcare interactions have been reported to include reduced knowledge, increased passivity, physical barriers, societal barriers and a lack of opportunities for PWA once SLP therapy has ceased (Howe, Worrall, & Hickson, 2008). CPT also has the potential to improve access and promote inclusion through active participation of PWA, thereby reducing barriers to healthcare and subsequent delivery of services (Horton et al., 2016b).

Perhaps a secondary important benefit that requires further investigation is the reduced anxiety likely to be experienced by HPs. Increasing an individual HP's confidence and knowledge of communication strategies is likely to reduce their anxiety and possible avoidance of situations or engagement with PWA (Finch et al., 2013). In the context of HPs who are inexperienced or still receiving training, reduced anxiety associated with less difficulty communicating may foster enhanced skills acquisition and learning, while maintaining patient-centred care (Finch et al., 2013). In summary, improved communication engagement between PWA and their treating clinical team is likely to enhance the quality of care provided and promote patient-centred care in an environment that facilitates meaningful interactions for both patients and HPs.

It is also noteworthy that the Australian Stroke Foundation Guidelines, the Centre for Clinical Research Excellence in Aphasia Rehabilitation and the UK National Institute for Health and Care Excellence stroke rehabilitation guidelines all recommend training family/carers but there are no specific guidelines related to members of the multidisciplinary team to enable them to support and communicate effectively with the person with communication difficulties (CCRE, 2014; National Institute for Health & Clinical Excellence - NICE, 2013; Stroke Foundation, 2010). Rayner and Marshall (2003) proposed that post-training guidance by an SLP may be indicated to ensure long-term use of communication strategies and ongoing generalisability of the acquired skills and strategies.

Communication training should also be included as a component of aphasia rehabilitation that is relevant for patients and their carers. In this regard, SLPs should offer support and training to family and carers (in addition to friends, volunteers and healthcare providers) to improve the communicative environment outside of healthcare settings.

Within a hospital setting servicing inpatients and outpatients, a program that includes theoretical knowledge, practical components and PWA as trainers is beneficial, as per the findings of this study. Further research is required however, to further investigate the specific program inclusions and structure in more details. The present study has added to the weight of evidence outlining the potential benefits of CPT, however, caveats are warranted when considering the implications of this study due to several limitations of the study design.

5.6 Conclusion

HPs who received the CPT program reported higher levels of confidence and demonstrated greater knowledge of communication strategies after training. These findings are consistent with and complement previous studies that have shown improvements in the ability of the communication partners to communicate with PWA following participation in a CPT program (Kagan et al., 2001; Legg et al., 2005; Rayner & Marshall, 2003; Turner & Whitworth, 2006). The present study suggests that a short package of training involving PWA as trainers significantly improved the confidence and knowledge of communication strategies in experienced staff. This is a useful precursor to further research involving the practical experience of using strategies measured in an observational way. It adds weight to the evidence indicating that CPT incorporated into continuing education, or mandatory training programs for new clinical staff involved in the care of PWA, could be an effective way to improve the ability of hospital staff in communicating with PWA. Ensuring that HPs are confident and knowledgeable regarding their communication with PWA, will likely enhance patient engagement and patient-centred care for PWA.

Table 5.3.3.1

Demographic Information of HPs

Characteristics	Participants
Health Professionals	n = 52
Allied Health Assistant	5
Audiology	2
Dietetics	1
Occupational Therapy	20
Pharmacy	1
Physiotherapy	10
Social Work	6
Nursing Staff (Rehabilitation Unit)	5
Females	47
Males	5
Age, years, median (IQR)	31 (26 - 45)
Years experiences, median (IQR)	6.5 (3 – 15.3)

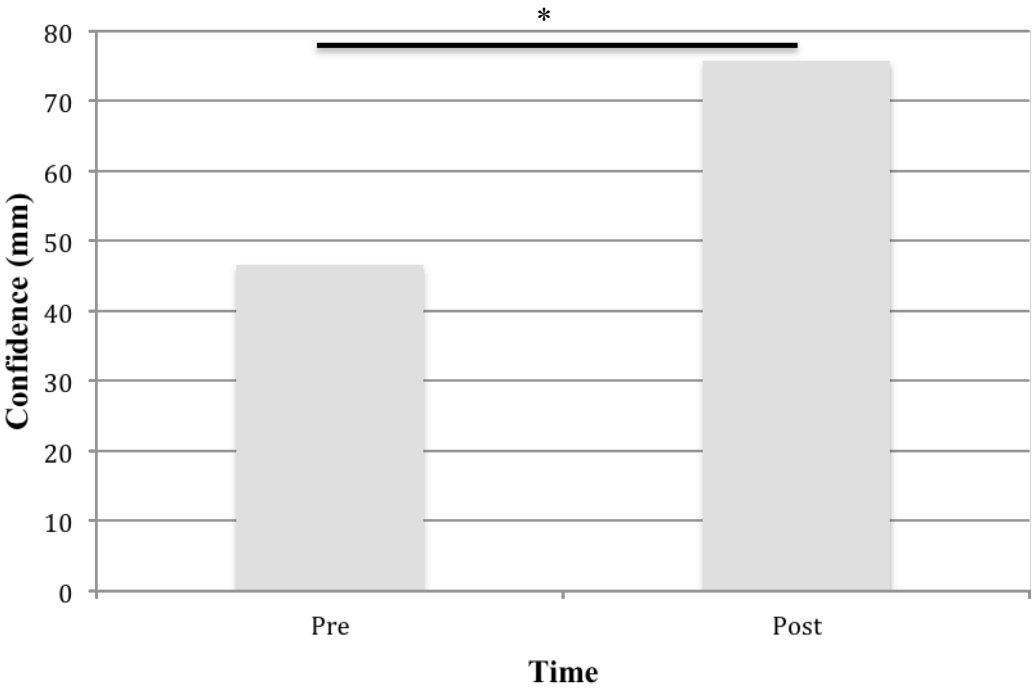


Figure 5.4.1

Confidence Rating of HPs Pre-Post CPT program

Table 5.3.5.1

Strategies Identified by HPs

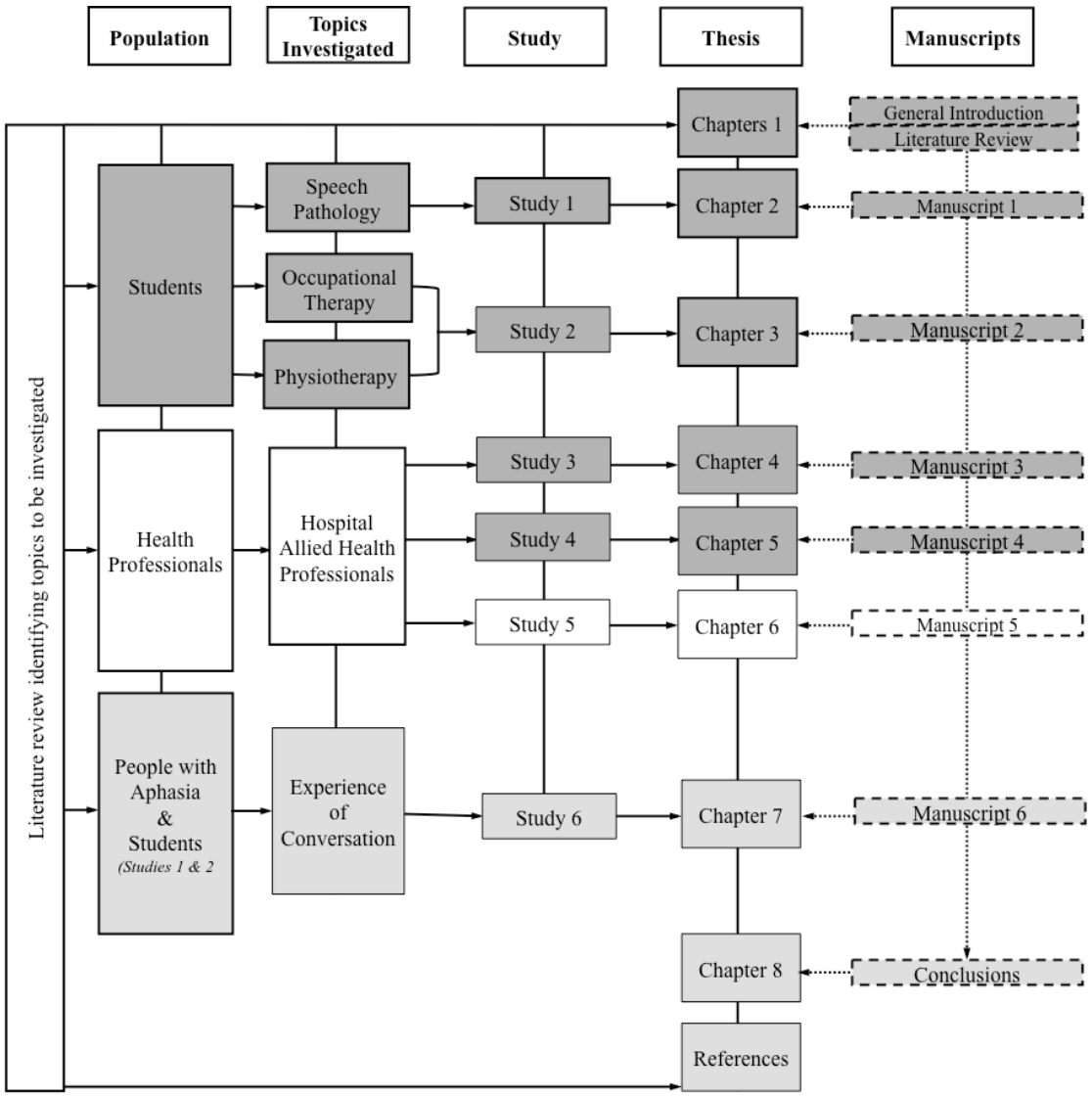
Categories	Responses	Pre-training Responses (n)	Post-training Responses (n)
Physical Strategies	Gestures	48	52
	Pointing	32	52
	Nodding	47	52
	Sign Language	5	0
	Non-Verbal Cues	42	50
Verbal Communication Strategies	Yes/No Questions	45	52
	Closed Questions	45	48
	Open Questions	10	52
	Establish Rapport	12	20
	Simple Language	12	52
	Time to respond	10	52
	Slow Speech rate	14	52
	Key words	23	52
	Short Sentences	9	52
	Check Understanding	5	50
	Rephrase/Clarify	15	52
	Acknowledge Attempts	3	51
	Negotiate to Re-Visit	2	50
	Share responsibility	9	47
	Empathy	3	46
Visual Information	Communication boards	10	52
	Communication cards	5	45
	Pictures/Signs/Maps	18	52
	Drawing	2	52
	Writing	36	52
	AAC	30	52
	Aphasia-friendly Materials	27	52
Environmental Changes	Ask a Speech Pathologist	50	52
	Look up a Textbook/Notes	16	28
	Engage Family/Friends	42	51
	Reduce Background Noise	38	52
	Clear Signage/Information (Aphasia Friendly)	40	52
Median n. of Strategies Identified by Participants, (IQR)		15 (9 - 38)	52 (50 - 52)

CHAPTER 6

Telepractice communication partner training for health professionals: A randomised trial.

Chapters 4 and 5 provided evidence to suggest that CPT does improve the success of communication between PWA and HPs, as well as increasing HPs' confidence and knowledge about communication strategies. Face-to-face CPT programs are often limited by having access to a SLP trained in delivering supported conversation techniques, and as such, there is a need to explore alternative methods of delivering CPT programs. Telepractice could be a viable option to meet this need, however, it is yet to be ascertained whether CPT can successfully be delivered via telepractice

The findings presented in Chapter 6, explore the delivery of CPT using synchronous telepractice (real time teleconferencing system) versus face-to-face training with HPs in a tertiary hospital setting. A point of interest in this study was to determine whether one mode of delivery was superior to the other, in terms of effectiveness and outcomes. Establishing this has the potential to have a notable impact on the development and application of this CPT program, particularly in relation to accessibility and support. The following manuscript entitled "Telepractice communication partner training for health professionals: A randomised trial" was under review by the *Journal of Communication Disorders.* This manuscript is inserted as submitted, with the exception of formatting (for details, please refer page xiv). Abbreviations are not re-defined in this chapter (please refer page xxix). All references have been combined and are presented in a single reference list at the end of this thesis (pages 124-140).


Population
Topics Investigated
Study
Thesis
Manuscripts
Literature review identifying topics to be investigated
Students
Health Professionals
People with Aphasia & Students
(Studies 1 & 2
Speech Pathology
Occupational Therapy
Physiotherapy
Hospital Allied Health Professionals
Experience of Conversation
Study 1
Study 2
Study 3
Study 4
Study 5
Study 6
Chapters 1
Chapter 2
Chapter 3
Chapter 4
Chapter 5
Chapter 6
Chapter 7
Chapter 8
References
General Introduction
Literature Review
Manuscript 1
Manuscript 2
Manuscript 3
Manuscript 4
Manuscript 5
Manuscript 6
Conclusions

Telepractice communication partner training for health professionals: A randomised trial.

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6.1 Abstract

Purpose: CPT can be beneficial in reducing accessibility barriers for PWA. The aim of the present study was to determine whether face-to-face or telepractice (real time video-teleconference system) delivery of a CPT program was associated with greater improvements in confidence and knowledge of effective communication strategies among allied HPs.

Method: 55 HPs were randomly allocated to receive face-to-face (n = 27) or telepractice (n = 28) CPT. All participants completed their allocated training. A customised mixed-methods self-completed questionnaire was used before and after receiving CPT for participants to rate their confidence when communicating with PWA using a 100mm VAS and answer an open-ended question about knowledge of communication strategies.

Results: At baseline, there were no significant differences between groups in confidence ratings (median (IQR), face-to-face 48mm (32mm, 54mm), telepractice 43mm (29mm, 56mm)) or number of strategies identified (face-to-face median = 4, IQR 3-5; telepractice median = 3, IQR 2-4). At the post-intervention assessment, confidence was significantly higher ($p<0.001$) for both groups (median (IQR), face-to-face 95mm (90mm, 97mm), telepractice 93mm (88mm, 97mm)), but no significant effect of group allocation was present. Similarly, more communication strategies ($p<0.001$) were identified (face-to-face median = 9, IQR 8-12; telepractice median = 9, IQR 8-11) but no significant effect of group allocation was present.

Conclusion: This study demonstrated HPs confidence for communicating with PWA and knowledge of strategies to facilitate communication improved immediately after receiving CPT via either face-to-face or telepractice, but neither approach was superior.

6.2 Introduction

With the evolution of technology and rapid advancement of resources available via communication technologies, telepractice services are becoming widely seen as a practical application for the provision of practice (Hall et al., 2013). The American Speech-Language-Hearing Association (ASHA, 2016) has suggested that telepractice should be considered when endeavouring to overcome barriers to service delivery and access. Affordable end-user devices and Internet applications have allowed for synchronous (real time) video interactions to be accessible on consumer grade software (Armfield et al., 2015; Hill, 2016). Telepractice can be defined as the delivery of learning over distance through the application of information and communication technologies (Curran, 2006). It has the potential to not only extend clinical outreach to rural and remote facilities, but within metropolitan regions and even within large facilities, when time constraints may limit accessibility. Therefore, telepractice has the potential to improve the access of patients to valuable clinical services and support the provision of staff training (e.g. CPT via telepractice). One of the pros of face-to-face delivery includes immediate, non-verbal interactions that are not impacted by a time delay or technology glitches, which can be a con of telepractice. However, while there is a growing body of work demonstrating the effectiveness of telepractice for many healthcare services (ACCRM, 2012; Brennan et al., 2010; Keck & Doarn, 2014; Theodoros, 2012), it is not yet known whether telepractice can be effectively used for all healthcare services (i.e. training), particularly for trainees of CPT who will be engaging with people who have communication challenges (Hall et al., 2013). Therefore, there is an urgent need to explore the effectiveness of telepractice models for CPT training and service delivery.

Aphasia is a prevalent condition that challenges communication among many patients accessing healthcare services (Rose, Ferguson, Power, Togher & Worrall, 2014). Communication difficulties associated with aphasia can create significant barriers to the involvement of PWA in decision-making within a healthcare setting. Research in this area has found CPT can be beneficial in reducing accessibility barriers, improving communication access and increasing the confidence and knowledge of participants (both trainers and trainees) (Cameron et al., 2015, 2017a, 2017b; Finch et al., 2013; Kagan et al., 2001; Legg et al., 2005; Pound et al., 2007; Rayner & Marshall, 2003; Turner & Whitworth, 2006).

CPT is designed to improve the skill level of communication partners to facilitate meaningful communication exchanges with PWA (Simmons-Mackie, Raymer, & Cherney, 2016). CPT modifies the environment (e.g., home, community or healthcare setting) by teaching people communicating with PWA about strategies and useful resources to benefit interactions (Simmons-Mackie 2013; Simmons-Mackie et al., 2010). *"The Communication Partner Scheme"* (CPS) used by Connect – The Communication Disability Network in the United Kingdom was developed

following identification of the long-term needs of PWA in the community becoming isolated and having reduced access to services (McVicker et al., 2009; Parr, Wimborne, Hewitt & Pound, 2008). The CPS involved trained volunteers being matched to a person with aphasia. The volunteers participated in training covering conversation partner skills, disability equality, and health and safety information. The volunteers also received direct feedback from PWA about their conversation skills and the strategies used to support communication (McVicker et al., 2009; Parr et al., 2008).

Another well known CPT program is SCA™ developed by Kagan (1998). This comprehensive training and education program has been widely used with volunteers in community, private and public healthcare settings. It is designed to facilitate the reintegration of PWA and minimise isolation by reducing barriers to communication. The strategies used in SCA™ include keywords (spoken and written), body language/gesture, drawings and pictographs with the main aims being to acknowledge and reveal the competence of the person with aphasia (Aphasia Institute, 2015; Kagan, 1998).

Prior research investigating face-to-face delivery of a CPT program with PWA included as skilled trainers for real time conversations and feedback was found to be an efficacious training method with beneficial outcomes for HPs, HP students and PWA (Cameron et al., 2015, 2017a, 2017b; Finch et al., 2013; Horton et al., 2016b). Some of these benefits include increased confidence and reduced anxiety for interactions between HPs and PWA, as well as, enhanced communication skills, improved awareness of resources, strategies and augmented knowledge about aphasia and associated challenges. Jensen et al. (2015) also reported a perceived reduction in patient frustration by trained HP staff interacting with PWA. Additionally, Swart and Horton (2015) found that PWA who had been trained, as CPT trainers, identified informal communication, social re-engagement and interpersonal connections as key outcomes of their involvement in a CPT program.

To date, research in the field has focussed on face-to-face education, and minimal research has been conducted considering e-learning and telepractice (real time video-teleconference system). One study conducted by Heard, O'Halloran and McKinley (2017) investigated the use of an *"E-learning Plus"* CPT program and face-to-face CPT (SCA™ model) with 48 HPs (nurses, allied health and medical) in an inpatient rehabilitation setting. The *"E-learning Plus"* component consisted of an online module (~30 minutes duration) and a face-to-face module (~60 minutes duration), but did not include experiential learning (e.g., real time conversations with PWA) via a telepractice system. The face-to-face SCA™ model was delivered as two separate training modules (both ~90 minutes in duration). Neither method of delivery was found to be superior and both yielded an increase in HPs' confidence for interacting with PWA and knowledge about aphasia (Heard et al., 2017).

The current study employs elements of both the CPS and SCA™ programs. A key feature of this model of CPT is providing experiential training opportunities to HPs working in an acute and sub-acute setting in a metropolitan tertiary hospital, using PWA in a 'train the trainer' model. Thus, this allows for a rich environment for learning, skill application and improved understanding of aphasia resulting in greater attainment of confidence and knowledge of pragmatic strategies to assist with communication with PWA. Furthermore, the authors were interested in identifying if there were any differences or benefits in delivering this CPT face-to-face versus via synchronous telepractice delivery. The benefit of using synchronous telepractice is that it mirrors the current face-to-face service delivery style used in healthcare, but permits remote-access to education opportunities (Hill, 2016). The aim of the present study was to investigate the effectiveness of face-to-face versus telepractice delivery of a CPT program for increasing the confidence and knowledge of effective communication strategies among HPs. It was hypothesised that both the face-to-face or telepractice groups receiving a CPT training program would result in improved confidence and knowledge of effective communication strategies, but that investigators were uncertain whether either approach would be superior to the other.

6.3 Method

6.3.1 Design

Prospective, 2-arm randomised control trial with 1:1 allocation (face-to-face or telepractice CPT conditions). As the purpose of the project was to conduct an equivalence trial (Lesaffre, 2008) to determine whether the telepractice delivery of the CPT program was effective compared to the traditional FTF version of the program, an additional control group was not included. Furthermore, it has already been well established by a large pervious body of work that CPT programs are effective (e.g. Finch et al., 2017a; Finch et al., 2017b; Kagan, 1998; Kagan et al., 2001; Legg et al., 2005).

6.3.2 Setting and participants

Participants included 55 HPs from a metropolitan tertiary hospital (see Table 6.4.1). HPs involved in this study included DNs (8 face-to-face, 9 telepractice), OTs (11 face-to-face, 11 telepractice) and PTs (8 face-to-face, 8 telepractice). Eight PWA (3 females, 5 males) were involved as trainers in the experiential CPT training program. The PWA had previously been involved in other related studies conducted by the authors and had completed the CPT trainer program (Cameron et al., 2015, 2017a, 2017b; Finch et al., 2013). The trainers were between two and eight years post stroke (mean 5 years) and had a median age of 66 years (interquartile range 57 to 69). An AQ score on the WAB was used as a means of quantifying the severity of aphasia for the PWA trainers (Kertesz, 1982). All levels of severity were represented by the trainers (severe, moderately-severe, moderate, mild-moderate and mild). Seven participants had an average AQ of

62.5 (mild-moderate). The remaining person with aphasia had a global aphasia with significant verbal dyspraxia and was not assessed via the WAB.

6.3.3 Sample size

The a priori sample size estimate indicated the study required 54 complete data sets for 80% power to detect a between group difference of 7.9mm on the primary outcome VAS (assuming a significance (alpha) level of 0.05, SD of 14mm, 1:1 allocation ratio, and 0.68 correlation between the pre- and post-intervention assessments).

6.3.4 Procedure and randomisation

Ethical clearance was granted from the participating health service and university human research ethics committees. HPs were recruited via their departmental staff meetings. HPs who indicated interest in the study were contacted to gain written informed consent prior to their participation and consenting participants completed the pre-education questionnaire. Consenting participants were then allocated to either face-to-face or telepractice groups in a 1:1 ratio, stratified by HP discipline. The randomisation sequence was prepared by a researcher not involved in the recruitment or assessment of participants using computerised random number generation and concealment using sequentially numbered opaque envelopes stored in a locked filing cabinet until the time of allocation.

6.3.5 Details of the interventions

The CPT intervention included a set 60 minute lecture delivered face-to-face (face-to-face group) or via real time video-teleconferencing system (telepractice group) by the lead research SLP (AC). The interventions were identical, except for the mode of delivery. This lecture was based on elements of both the CPS and SCA™ programs and previous studies by the researchers (Aphasia Institute, 2015; Cameron et al., 2015, 2017a, 2017b; Finch et al., 2013; Kagan, 1998; McVicker et al., 2009; Parr et al., 2008). The lecture included theoretical information about aphasia, role-play opportunities, video examples, personal interviews with PWA about their experiences and detailed information about strategies and resources to aid communication exchanges. It also included recommendations for adapting communication strategies for technology-based telecommunication conditions (e.g., writing down keywords on a piece of paper then show the camera, appropriately size font, black pen on white paper, ensuring both parties had access to the same resources being used to support the conversation). This was immediately followed by the experiential conversation component (15 to 20 minutes in duration) with a HP and PWA (one-on-one or a dyad based on the severity of aphasia). The conversation occurred either face-to-face or via real time video-teleconferencing. Communication aids were provided (e.g., paper / pen, maps, newspapers, pictographic scales). At the end of the conversation, the PWA provided feedback to the HPs about the conversation and use of strategies and resources. They also reported overall how they felt the

conversation was, the good points and one to two things to change for next time. This process was facilitated through the use of a feedback tool *("Running a Communication Partner Scheme"* by Parr et al., 2008) that broke the conversation elements down into nine components (e.g., use of keywords, speed of conversation, balanced and equal). The PWA had previously received training on the use of this tool for providing feedback. A Speech Pathologist provided a six to eight week aphasia friendly training program, designed to provide education and support for the PWA to participate in this 'train the trainer' style of implementing CPT. The HPs then completed the post-training written questionnaire. The entire CPT program was completed within a two hour period. The video-teleconferencing system could be accessed via computers or tablets.

6.3.6 Outcome measures

A written questionnaire was used to collect demographic (age, gender) and clinical (discipline, years of experience) information from the HPs. The HPs were also asked to rate their confidence level for interacting with PWA on a 100mm VAS where 0mm represented *"Not at all confident"* and 100mm represented *"Very confident"*. This was completed before and after the CPT program. These measures have been used successfully to demonstrate change with CPT programs in previous studies (Cameron et al., 2015; Cameron et al., 2017a; Cameron et al., 2017b; Finch et al., 2013; Finch et al., 2017a; Finch et al., 2017b). HPs' knowledge of strategies was also collected pre-post CPT via the written questionnaire. No examples of strategy types or resources were provided as prompts in the open-ended questions, the HPs were just required to write down specific strategies they thought would be effective. The written questionnaire was provided immediately before and after CPT, thus it measured perceived confidence and acquired knowledge and strategies for potential future translation into clinical practice rather than actual integration of strategies into clinical practice (which was beyond the scope of the present study).

6.3.7 Data analysis

Conventional descriptive statistics were used to summarise the characteristics of the HP sample, as well as their confidence and knowledge of communication strategies before and after the CPT. Wilcoxon rank-sum (Mann-Whitney) tests were used to examine whether any between group differences were present at baseline for confidence ratings or total number of identified communication strategies. Content analysis (Marks & Yardley, 2004; Patton, 2002) was used to categorise the type of strategies identified and group them into four themes (physical gesture, verbal, visual and environment) as determined by the authors and described in prior research (Cameron et al., 2015, 2017a, 2017b; Finch et al., 2013). This process involved two members of the research team (EF, AC) coding each valid communication strategy under the four aforementioned pre-specified categories. A third member of the research team was available to resolve any disagreements between the two coders, but was not required. A count of the total number of

strategies for communicating with PWA was calculated for each HP participant as an indicator of strategy knowledge for inclusion in further analyses. At the time of coding the suggested communication strategies, the two coders were blinded to whether the questionnaires were from before or after delivery of the education, as well as the group from which the response originated.

To examine the impact of receiving face-to-face or telepractice on participant VAS confidence ratings, a generalised linear modelling process was undertaken. First generalised linear models (Gaussian family, identity link) were prepared for the sample without and with the inclusion of potential covariates (age, gender, professional discipline). AIC was used as an indicator of model fit with penalty for complexity (Akaike, 2011). Within each generalised linear model a group by assessment time-point interaction term was used to examine whether group allocation influenced the amount of change that occurred between the pre and post education confidence ratings. Residual plots confirmed that both the adjusted and non-adjusted model residuals did not substantially deviate from a normal distribution (not presented).

One substantial outlier was observed to have a confidence rating 73mm lower than any other participants at the post-education assessment (the total scale range was 100mm), and substantially lower than that individual's pre-education assessment. This may have occurred as a result of an inadvertent misinterpretation of the confidence rating scale anchors (in the opposite direction) at the follow-up assessment. However, it was also plausible that this low rating from one individual was intentional on account of altered perceptions of confidence after experiencing the training that included a conversation with a PWA (McPhail et al., 2010; McPhail & Haines, 2010). Subsequently, the aforementioned models were fitted with and without the inclusion of this very low rating to examine whether the trial findings were sensitive to this outlier. However, the inclusion or exclusion of this outlying value was inconsequential to the trial findings (and therefore only analysis with all participants included is presented).

To examine the impact of receiving each respective intervention on identification of communication strategies (count of strategies as the dependent variable, secondary outcome), generalised linear models (Poisson family, log link option) were prepared using the same processes outlined above for the VAS generalised linear modelling and inclusive of a group by assessment time-point interaction term. Models were again presented without and with adjustment for potential covariates of age, gender and profession. There were no outlying values for the count of strategies identified by participants.

Analyses were conducted on an intention to treat basis using Stata 13 (StataCorp. 2013. *Stata Statistical Software: Release 13*. College Station, TX: StataCorp LP). Alpha was set at 0.05 for all analyses.

6.4 Results

The sample included 55 participants (49 females; 6 males) from three allied health disciplines (DN 17; OT 22; PT 16) who were allocated to the face-to-face (n = 27) or telepractice (n = 28) condition. Participants' mean (SD) age was 33 (9) years and professional experience was 8 (7) years (see Table 6.4.1). At baseline, there was no significant difference present in confidence ratings between the face-to-face (median = 48mm, IQR 32-54mm) and telepractice groups (median = 43mm, IQR 29-56mm). Confidence was higher at the post-intervention assessment for both the face-to-face (median = 95mm, IQR 90-97mm) and telepractice (median = 93mm, IQR 88-97mm) groups ($p<0.001$, Table 6.4.2). The group by assessment time-point interaction term in the generalised linear models indicated no significant group by time effect on confidence ratings was present. It was noteworthy that older participant age was also associated with higher confidence ratings (Table 6.4.2). It could be assumed, that these HPs have worked longer professionally, and as such have a baseline level of confidence higher than younger HPs, as a direct correlation of experience.

Similarly, no significant difference was present in the number of strategies identified at baseline between the face-to-face group (median = 4 strategies, IQR 3-5) and telepractice group (median = 3 strategies, IQR 2-5). More communication strategies ($p<0.001$, Table 6.4.3) were identified at the post-intervention assessment for both the face-to-face group (median = 9 strategies, IQR 8-12) and telepractice group (median = 9 strategies, IQR 8-11), but no significant difference between groups was present (Table 6.4.3). The types of strategies reported were consistent between groups at both assessments, and demonstrated improved awareness of relevant strategies to acknowledge and reveal the competence of PWA following CPT. Beneficial strategies identified post training by participants from both groups included acknowledging attempts to communicate, using gesture, written keywords, use of objects and pictures and scales, using yes/no questions, using short/simple language, clarifying, 'unpacking information', and allowing sufficient time for the PWA to respond.

6.5 Discussion

The findings of this study suggest that a CPT program, consisting of a didactic education component and interactive experiential conversation with communication partners and PWA as the trainers, was successfully delivered via face-to-face or via telepractice. This study demonstrated HPs' confidence for communicating with PWA and knowledge of strategies to facilitate communication, improved immediately after receiving CPT in either condition, but neither approach was superior. This finding of neither approach being superior was consistent with the only other telepractice study in the field (Heard et al., 2017), despite differences in educational intervention content and HP setting, experiential learning through conversation with PWA and

outcome measures used. There is growing interest in healthcare providers being skilled in communication techniques to improve communication access for individuals requiring input (Hill, 2016; The Joint Commission, 2010). The authors of the present study have previously found that the salient feature of the CPT program is the application of skills and direct connection with PWA in a practical conversation, whether delivered face-to-face or via telepractice. Hence, it is important to foster an enhanced learning environment, promote engagement of the trainees and provide an opportunity for translation of knowledge to practice. This is supported by a study conducted by Skilton (2011), who also noted the positive effect of real time interactions for HPs with PWA to utilise communication skills as appropriate for the conversation via telepractice. Online learning is therefore advantageous as it allows flexibility of access and scheduling to HPs and has been found to provide an equally as effective method compared to face-to-face environments (Heard et al., 2017; Hill, 2016; Maloney et al., 2011; McCutcheon, Lohan, Traynor & Martin, 2015). Using telepractice could improve the accessibility of CPT for more PWA and HPs Providing a supported conversation tool, such as a CPT program, gives a vehicle to individuals about *how* to have a conversation (Kagan, 1998). Engaging in a conversation with PWA is therefore no longer considered an unattainable special skill of trained SLPs only. As an adjunct, CPT also provides an opportunity for ongoing therapy as its participation model facilitates language change and consolidation (Horton et al., 2016b; McMenamin, Tierney & MacFarlane, 2015a). It is also interesting to note, that both didactic lecture and experiential conversation are equally as beneficial in the delivery of CPT, as identified in a previous study completed by the current researchers (Finch et al., 2017b). The current study extends this work by demonstrating that both the lecture and content components of the current CPT program can be successfully delivered via telepractice.

6.5.1 Strengths and limitations

A limitation of this study was that no follow up was actioned to identify whether the improved confidence and use of effective skills for communication were ongoing. It would be interesting to further explore the impact on HP performance across various time points post the CPT program (e.g., three, six, 12 months) to evaluate maintenance of change and whether 'refresher' courses were needed. It has also yet to be explored whether the amount of time dedicated to the CPT program was appropriate or whether increased time (within or across sessions) would have resulted in enhanced outcomes for HPs, both immediately and with a delay. Longer-term effects of CPT were beyond the scope of this study. However the authors acknowledge that data pertaining to follow-up maintenance of learning, practical application and further practical assessments with PWA would be important to identify the value of a CPT program (for both HPs and PWA) and to determine how successful the HPs were at implementing the techniques. Moreover, the empirical data for this investigation was generated from a 60 minute didactic education session and 15 to 20 minute

interactive conversation delivered either face-to-face or via a video teleconferencing system, at a single hospital setting in a metropolitan region of an industrialised country. Consequently, extrapolation of findings to dissimilar settings or HPs may not be possible. Thus, further replication across other contexts is required to ascertain the most effective and successful method of CPT for increasing HPs confidence and knowledge for interacting with PWA. Self-report scales and questionnaires were also used in this study. This may be considered a strength as it allowed for insight into the participants' perspectives around their changes to knowledge and confidence. However, it is also a limitation, as it does not allow for validity and reliability of the data to be determined, as it was not feasible to include a quality scale and direct clinical observations of future interactions with PWA within the scope of this study. The scope of this study was to determine equivalence of the CPT delivery methods rather than whether one approach was superior to the other, and as such a control group was note included. Future research could be conducted with a control group (as well as the face-to-face and telehealth groups) to determine which approach is more effective. Another limitation of this study was the perspectives of PWA about CPT via telepractice were not captured.

6.5.2 Implications for practice

Providing flexible access options via telepractice for HPs to participate in CPT could enable increased opportunities for more individuals to receive education to augment their ability to communicate with PWA in healthcare settings. As highlighted by Brown (2011), when using technology in practice, it is also important to consider any licensing or credentialing requirements, as well as ethical, privacy, and legal issues. Other associated considerations include the quality of the connection and video-teleconferencing transmission, scheduling logistics, access to reliable and secure systems, the quality of the material provided, how to adapt training (e.g., writing down keywords in thick black pen on white paper and holding it up to the camera to ensure readability), accessibility and use of equipment and software required (Armfield, Gray, & Smith, 2012; Fitch, 1983; Goldberg, Haley, & Jacks, 2012; Hill, 2016; Lasker, Stierwalt, Spence, & Calvin-Root, 2010; Theodoros, Hill, Russell, Ward, & Wootton, 2008).

6.5.3 Future research

Investigation involving multiple hospital sites is required to further explore the scope, breadth and relevancy of CPT to ascertain if it affects real change in terms of confidence, knowledge, preparedness and generalisation of principles into the respective workplace environments (Finch et al., 2013; Heaven et al., 2006; Horton et al., 2016b; Simmons-Mackie et al., 2010). In addition, it would be useful to know whether an increase in confidence necessarily correlates to improvements in practice and ideally, measurable benefits from patients' perspectives. Further research is also needed into the type of CPT programs that would provide the most relevant

and long-term effects to ensure tailored implementation with increased relevancy and maximised translational gains into clinical practice and consumer engagement. The establishment of guidelines and a specific, replicable framework, would be valuable to disseminate the use of e-learning and telepractice for CPT across clinical (e.g., hospital and community-based settings) and education institutions (e.g., universities that train HPs) to ensure consistency, standardisation and generation of evidenced-based practice recommendations.

6.6 Conclusion

Previous research has shown that CPT involving PWA as trainers is an effective method to improve the ability of HPs to communicate with PWA. The present study suggests that telepractice is a viable form of delivery as there was no indication that either approach (face-to-face versus telepractice employing both didactic and experiential educational components) was superior in improving the confidence and knowledge of strategies among HPs. Therefore, telepractice is an effective and feasible option in which to administer training within a complex healthcare setting that has potential to overcome geographical barriers to accessing training opportunities.

Table 6.4.1

Characteristics of the Sample

Characteristics	Participants
Age in yrs, mean (SD)*	33 (9)
Females	49
Males	6
Years of experience, mean (SD)*	8 (7)
Health Professionals Total	N = 55
Occupational Therapy	40%
Dietetics	31%
Physiotherapy	29%

*Note. *Self-reported by participants.*

Table 6.4.2

Summary of a) Unadjusted and b) Adjusted Generalised Linear Models Examining the Relationship Between Group Allocation and Confidence Ratings (Before and After Intervention)

Model dependent variable	Independent variables	Coefficient	Coefficient 95% Confidence Intervals		p-value	Interpretation
a) Confidence (100mm VAS)	Group (telepractice vs. face-to-face)	0	-9	9	0.97	The significant effect of time-point (inclusive of both groups) indicated that confidence was higher at the post-intervention assessment. The absence of a significant group by time-point interaction indicated that neither group had increased their confidence more than the other after receiving the education.
	Time-point (post versus pre)	49	40	58	*<0.001	
Wald Chi(3) = 213 P<0.001	Group by time-point interaction	-4	-17	8	0.49	
AIC = 936						
b) Confidence (100mm VAS)	Group (telepractice vs. face-to-face)	1	-8	10	0.84	
	Time-point (post versus pre)	49	40	57	*<0.001	
Wald Chi(7) = 231 p<0.001	Group by time-point interaction	-4	-17	8	0.48	The overall interpretation is the same as Table 6.4.2a (above). In addition, older age was associated with higher confidence ratings.
AIC = 935	Age (per decade)	4	0	7	*0.03	
	Male gender	-7	-17	4	0.20	
	Profession					
	Occupational Therapy	Referent				
	Dietetics	3	-5	10	0.46	
	Physiotherapy	6	-2	14	0.15	

*Notes. AIC = Akaike's information criterion; * Statistically significant finding at p<0.05**

Table 6.4.3

Summary of a) Unadjusted and b) Adjusted Generalised Linear Models Examining the Relationship Between Group Allocation and Strategies Identified (Before and After Intervention)

Model dependent variable	Independent variables	Coefficient	Coefficient 95% Confidence Intervals		p-value	Interpretation
a) Strategies (total count) Wald Chi(3) = 139 P<0.001 AIC = 490	Group (telepractice vs. face-to-face)	-0.23	-0.52	0.05	0.10	The significant effect of time-point (inclusive of both groups) indicated that more strategies were identified at the post-intervention assessment. The absence of a significant group by time-point interaction indicated that neither group had increased the number of strategies identified more than the other after receiving the education.
	Time-point (post versus pre)	0.92	0.70	1.15	*<0.001	
	Group by time-point interaction	0.14	-0.20	0.47	0.42	
b) Strategies (total count) Wald Chi(7) = 146 p<0.001 AIC = 491	Age (per decade)	0.06	-0.02	0.15	0.12	The overall interpretation is the same as Table 6.4.3a (above). There were no significant additional covariates with the inclusion of age, gender and profession.
	Male gender	-0.16	-0.43	0.11	0.25	
	Profession					
	Occupational Therapy	Referent				
	Dietetics	-0.14	-0.32	0.04	0.13	
	Physiotherapy	0.04	-0.14	0.22	0.69	
	Group (telepractice vs. face-to-face)	-0.22	-0.50	0.07	0.13	
	Time-point (post versus pre)	0.92	0.70	1.15	*<0.001	
	Group by time-point interaction	-0.14	-0.20	0.47	0.42	

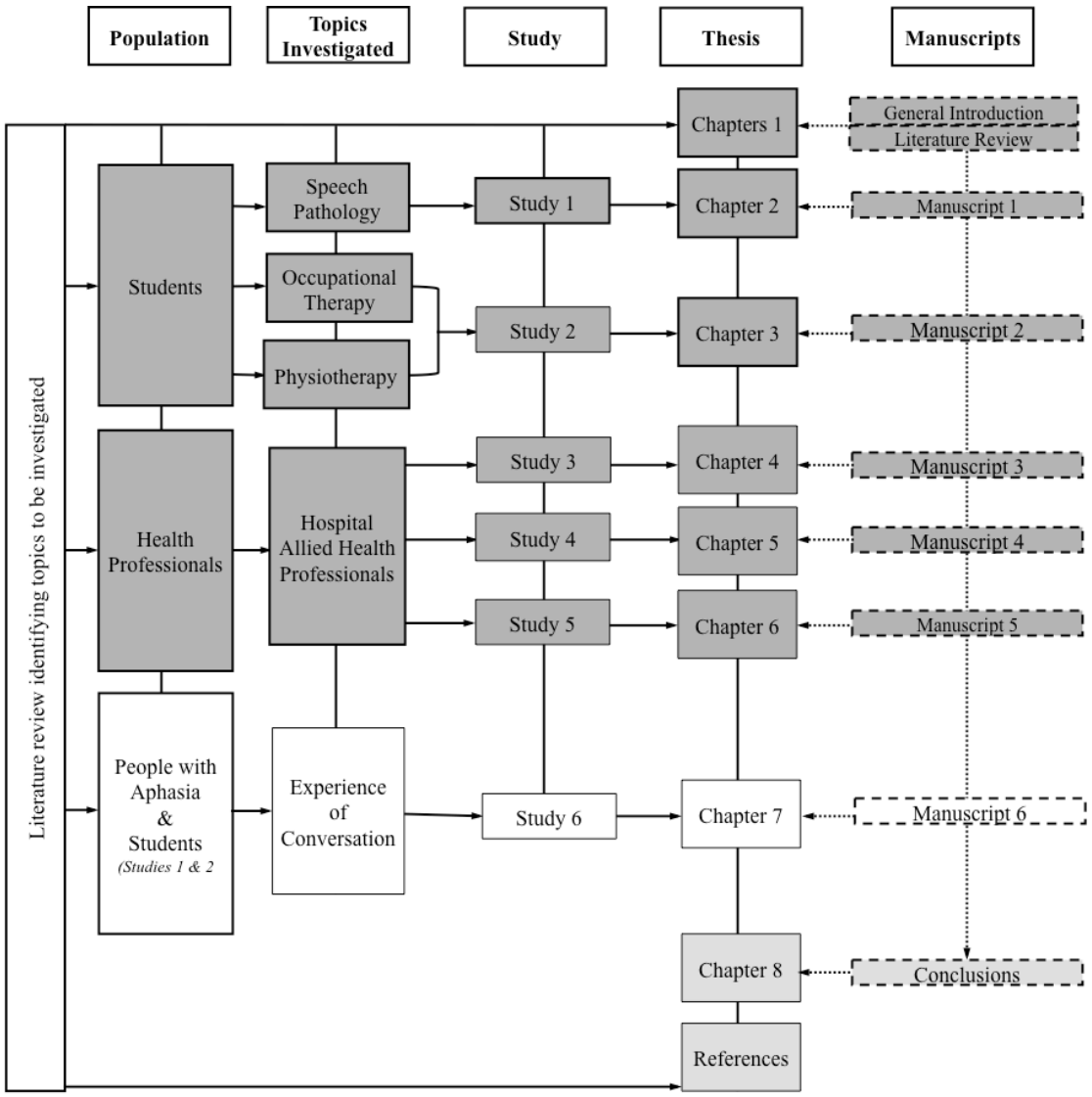
*Notes. AIC = Akaike's information criterion; * Statistically significant finding at p<0.05**

CHAPTER 7

"I've got to get something out of it. And so do they": Experiences of people with aphasia and university students participating in a communication partner training program for healthcare professionals.

Chapters 2 to 6 have investigated the need for training of HPs and HP students, identified CPT as a viable training option for a healthcare setting and explored whether the mode of delivery resulted in altered beneficial outcomes. These series of studies have established that CPT in a healthcare setting is a practical option to providing much needed training and ascertained that both face-to-face or telepractice are feasible delivery methods. The following chapter (Chapter 7) explores the perspective of 8 PWA and 77 HP students and provides a qualitative evaluation of the participants' experiences involved in the research studies. .

The following manuscript entitled ""I've got to get something out of it. And so do they": Experiences of people with aphasia and university students participating in a communication partner training program for healthcare professionals" was published in the *International Journal of Language & Communication*. This manuscript is inserted as published, with the exception of formatting (for details, please refer page viii). Abbreviations are not re-defined in this chapter (please refer page xxix). All references have been combined and are presented in a single reference list at the end of this thesis (pages 124-140).


Population
Topics Investigated
Study
Thesis
Manuscripts
Literature review identifying topics to be investigated
Students
Health Professionals
People with Aphasia & Students
(Studies 1 & 2
Speech Pathology
Occupational Therapy
Physiotherapy
Hospital Allied Health Professionals
Experience of Conversation
Study 1
Study 2
Study 3
Study 4
Study 5
Study 6
Chapters 1
Chapter 2
Chapter 3
Chapter 4
Chapter 5
Chapter 6
Chapter 7
Chapter 8
References
General Introduction
Literature Review
Manuscript 1
Manuscript 2
Manuscript 3
Manuscript 4
Manuscript 5
Manuscript 6
Conclusions

"I've got to get something out of it. And so do they": Experiences of people with aphasia and university students participating in a communication partner training program for healthcare professionals.

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7.1 Abstract

Background: CPT has been used to support communication partners to interact successfully with PWA. Through successful CPT interaction PWA's accessibility to healthcare is notably improved. The present study sought to build on prior studies by investigating the experiences of individuals with aphasia and healthcare providers to ascertain what they deemed to be beneficial from CPT. The study also sought to expose areas that could be refined or improved, depending on the setting and skill-set of those participating.

Aims: To gain an understanding of the experiences of PWA involved in the provision of CPT to HP students. Also to investigate the experiences of HP students who participated in the CPT program.

Methods & Procedures: Eight PWA and 77 HP students, who had completed a CPT program participated in a focus group / semi-structured interview (PWA) and feedback session (HP students) moderated by two SLPs. These sessions were recorded (audio and video), transcribed verbatim, including non-verbal communication, and analysed using qualitative content analysis.

Outcomes & Results: Overall, the study sought to understand experiences of the training. Both the PWA and HP students reported positive experiences of CPT. PWA discussed their perception that CPT improved HPs and HP students' understanding and interactions conversing with them and emphasised the need for training and education for all health related professions. HP students enjoyed the opportunity to experience interacting with PWA, without being 'assessed' and felt it consolidated their learning based on lecture content.

Conclusions & Implications: Inclusive and accessible healthcare is paramount to ensure the engagement of patients and providers. Based on the experiences and feedback of the participants in this current study, CPT offers a salient and practical training method with potential to improve practice. Participants perceived CPT to be beneficial and validated the need for the training to support PWA accessing healthcare.

7.2 Introduction

Interactions between patient and provider in healthcare are dependent on communication accessibility (O'Halloran, Grohn, & Worrall, 2012). Without this, patient outcomes are significantly limited and, moreover, providers cannot meet a basic standard of care (O'Halloran, et al., 2012). It has been documented in the aphasia literature that PWA have reduced health-related QoL outcomes compared with their likely health-related QoL outcomes without aphasia (Hilari, Needle & Harrison, 2012). Areas that are likely to be impacted include emotional, medical and social domains. Despite the known prevalence and substantial impact of aphasia on the lives of PWA, a study conducted by Hilari et al. (2015) into SLPs' perspectives of QoL for PWA across 16 countries found that QoL outcomes measures are not routinely used in clinical practice. The main recommendation from this study was that HPs need education and training to ensure consideration of such measures for use with PWA. By HPs assessing health-related QoL using outcome measures, they can understand the facets of health-related QoL that PWA are most concerned about in order to include these aspects in clinical interventions. In doing so, it is hoped that PWA will continue to live successfully with aphasia, as the perceived health-related QoL outcomes impacted by aphasia can be addressed (Hilari et al. 2012, 2015).

Communicative interactions are one focus of exploration when considering the main QoL themes impacted by aphasia. CPT (an environmental intervention that uses communication resources and strategies) offers a possible solution for supporting QoL for PWA and their communication partners. Training communication partners to use strategies and resources to support conversation can facilitate communicative participation for individuals with aphasia. In turn, this limits the disempowerment and psychosocial impacts often experienced as a direct result of aphasia (McMenamin et al. 2015a). A systematic review by Simmons-Mackie et al. (2010), found that CPT was (1) effective in improving the skills of communication partners to communicate with individuals with aphasia and (2) can be maintained over time. The main purpose of CPT is to increase participation through functional communication and promotion of well-being (Simmons-Mackie, Raymer, & Cherney, 2016). Studies have documented positive effects of training for a range of communication partners including family members or caregivers of PWA, volunteers, and HPs (Cameron et al., 2015, 2017a, 2017b; Finch et al., 2013, 2017a; Simmons-Mackie et al., 2010).

The importance of providing CPT to healthcare providers was evidenced by studies that suggest patients with communication disorders are disadvantaged within the healthcare system, being at greater risk of experiencing adverse events during hospital stays (Bartlett, Blais, Tamblyn, Clermont, & MacGibbon, 2008; O'Halloran et al., 2012) and being less satisfied with their healthcare experiences (Hoffman Institute Foundation, 2005). A qualitative meta-analysis of three studies on environmental factors influencing communication between patients and healthcare

providers in stroke units found that healthcare providers' knowledge of communication disabilities, communication skills, and attitudes affected acute stroke inpatients (O'Halloran et al., 2012). Additionally, the accessibility of communication impacts on processes that direct healthcare provision.

Horton et al. (2016a) conducted a qualitative study investigating the feasibility and clinical efficacy of a CPT program, particularly looking at its value within a rehabilitation setting for PWA presenting with moderate-to-severe-type aphasia. The HPs who participated in the study were able to recognise and understand the importance of the 'lived experience' for PWA and, by extension, placed value on cultivating quality interactions (Horton et al. 2016a). As argued by Byng and Duchan (2005), within the paradigm of a social model, the authentic involvement of PWA in planning, implementing and evaluating services (directed at assisting PWA) is essential. This is because it demonstrates the valuing of the 'lived experience' and acknowledges PWAs' expertise.

McMenamin et al. (2015a) explored the participant's experience of aphasia and involvement in a CPT program. A Participatory Learning and Action model was used to support PWA to answer various research questions (O'Reilly-de Brún & de Brún, 2011). The model supports dynamic brainstorming through varied materials (e.g. stationery, pictures) to reflect the fluidity of thought. Thematic analysis was used to interpret the data and group the responses into key themes. Interestingly, by the very nature of CPT revealing the competence of PWA and requiring PWA to have conversations with unfamiliar individuals, the participants reported that their feelings of incompetence were reduced (McMenamin et al., 2015a). Similarly, Pearl, Sage, and Young (2011) identified a number of benefits of volunteering for individuals with aphasia, including an increase in confidence and perceived purpose. Confidence was of particular importance to the PWA as they considered it a significant benefit of volunteering. In addition, enhanced engagement in participatory activities, either alone or with others not necessarily impacted by aphasia, was also identified. This related to the concept of identity and not being 'defined' by an impairment (Pearl et al. 2011). However, this study also highlighted the need for ongoing support for individuals with aphasia engaging in volunteer work. This was due to the need for an individual to find relevance in activities and foster meaningful opportunities in order to support engagement.

Another group that is vital to survey regarding their experiences with CPT are HP students. As future HPs, students will likely be expected to interact with PWA in clinical settings. Previous studies have found that HP students report low levels of confidence and knowledge for interacting with PWA before completing a CPT program (Cameron et al., 2015; Finch et al., 2013, 2017a). While qualitative studies have explored experiences of PWA and HPs participating in CPT programs, the present paper adds to the literature by also considering the perspectives of HP students.

Therefore, the intent of the current study was to learn about the perceptions of PWA and HP students regarding their experiences of participating in a CPT program. Specifically, the first aim was to gain an understanding of the individual's with aphasia opinions about the CPT program and provision to HPs and HP students, to inform future implementation. The second aim was to understand SLP, OT and PT student experiences as recipients of CPT, including their perceptions about the benefits and potential improvements to the program.

7.3 Method

7.3.1 Overview of the CPT program and broader study

The CPT program was based on Connect's "*Making Communication Access a Reality Program*" (Connect - The Communication Disability Network, 2007, 2011, 2013) and SCA™ (Kagan et al., 2001). Training included a 60 minute lecture about aphasia and strategies for effective communication with individuals with aphasia given by a qualified SLP. Working in pairs, trainees then completed a 15 minute conversation with volunteers with aphasia to practise the communication strategies learnt. Volunteers with aphasia provided real time and reflective feedback to the students regarding the conversational exchange and strategies employed with use of a simple, aphasia friendly, evaluation tool from Connect – The Communication Disability Network *"Running a Communication Partner Scheme"* (2011) program that consisted of 11 questions related to the conversation interaction and strategies employed (see Connect – The Communication Disability Network 2013 for more information). All individuals with aphasia had completed 12 hours of preparatory training over a six week period adapted from the "*Running A Conversation Partner Scheme"* under the tutelage of an SLP before volunteering in the CPT program. Volunteers with aphasia elected to complete the conversations with trainees either individually or in a pair, depending on their severity of aphasia and own preference.

The broader study involved HPs from a single site metropolitan tertiary hospital and HP students in the School of Health and Rehabilitation Sciences at a single site university, participating in quantitative evaluation of their confidence and knowledge of communication strategies when interacting with PWA (Cameron et al., 2015, 2017a, 2017b; Finch et al., 2013, 2017a). The evaluation consisted of a self-report questionnaire that asked questions pertaining to (1) demographics and clinical experience; (2) level of confidence for communicating with PWA on a 100mm VAS from *"Not at all confident"* (0) through to "*Very confident"* (100); and (3) HPs and HP students providing specific strategies that could be used in a clinical context to facilitate interactions between PWA and healthcare providers.

7.3.2 Current study

In this nested study, a subset of PWA and HP students from the broader research series participated in either focus groups / semi-structured interviews (PWA) or a feedback session (HP students) moderated by a SLP. The authors were interested to understand the perception of the participants involved in the training and, as such, decided that a qualitative research design would enable the investigation of these experiences and add to the ongoing data informing future CPT (e.g. content, timing, environment). The Metro South Health Service District Human Research Ethics Committee and UQ MREC granted ethical approval for the study.

7.3.3 Participants

7.3.3.1 Individuals with aphasia

A total of eight individuals with aphasia (four females, four males) participated in the current qualitative study. They were between 2 and 6 years post stroke (mean = 3.4 years) and had a median age of 64 years (IQR = 59-69 years). These participants self-selected from a group of 12 individuals with aphasia who were involved in the broader research program as volunteers providing CPT to HPs and HP students. The level of aphasia severity was determined using an AQ score on the WAB, which provides a clinical description of the impairment level of function (Kertesz, 1982). Seven PWA had an AQ score between 41 (moderately severe) and 82 (mild), with an average AQ of 62 (mild-to-moderate). The remaining person with aphasia had global aphasia with significant verbal dyspraxia and was unable to be assessed via the WAB (Kertesz, 1982).

7.3.3.2 HP students

There were 49 SLP, seven OT and 21 PT student participants who were enrolled in undergraduate or coursework masters' programs at UQ. Students were at varying time points in their degrees, but were recruited because they were currently undertaking relevant coursework lectures in adult neurogenic disorders and had not yet had clinical placements working with individuals with stroke and aphasia. Students were recruited via a brief presentation by a member of the research team at the conclusion of one of their academic coursework lectures. Student participation in the training program was voluntary and students were informed that participation or non-participation would not impact on their university assessment.

7.3.4 Data collection

All focus groups / semi-structured interviews and group feedback sessions were audio and video recorded and transcribed verbatim. Video recordings were reviewed to capture non-verbal communication behaviours (e.g. gestures, nodding, facial expressions) that added meaning to the transcripts.

7.3.4.1 Individuals with aphasia

Data were collected from participants with aphasia in two focus groups / semi-structured interview sessions. Focus groups were chosen to allow participants to react to, build on and discuss responses from other group members in order to generate data that might not have emerged through individual interviews and to explore differing opinions within the group (Stewart, Shamdasani & Rook, 2007). However, the sessions were also semi-structured interviews as a topic guide was developed and included the following: (1) experiences of participating in the training; (2) elements of the training that they liked; (3) elements of the training that they felt could be improved; and (4) suggestions for changes to the training. The one hour long focus groups / semi-structured interviews, held two to six weeks post involvement in the CPT program, were conducted at a university and tertiary hospital by two SLPs involved in the study who were well known to the PWA. The SLP facilitators supported the engagement of the participants, as needed, and ensured each participant had an opportunity to express themselves. Visual materials (e.g. written, pictures) and communication aids were also made available to all of the participants.

7.3.4.2 HP students

At the conclusion of their training students participated in large group feedback sessions in which a moderator (SLP) facilitated discussion about their experiences of participating in the training. The SLP who had provided the lecture content of the training was not present in the room to avoid any bias or censorship. Two groups were held consisting of SLP students in one group and OT and PT students in the other group. Open, non-leading questions were proposed by a moderator and the topics discussed included (1) positive aspects or perceived benefits and (2) negative aspects or ways in which training could be improved. Students were encouraged to speak freely and provide commentary on all aspects of the training, both positive and negative. Both verbal and written feedback (anonymous) options were available as way of response by the students during the one hour long feedback session.

Focus group / semi-structured interview and group feedback sessions were audio and video recorded and transcribed verbatim. Video recordings were reviewed to capture non-verbal communication behaviours (e.g. gestures, nodding, facial expressions) that added meaning to the transcripts.

7.3.5 Data analysis

Transcripts were analysed using qualitative content analysis as outlined by Graneheim and Lundman (2004). The authors chose this type of analysis as it allows the meaning participants bought to their experiences of the CPT to be captured from the generated content in line with the naturalistic paradigm (Hsieh & Shannon, 2005). Data from the two participant groups (participants with aphasia and students) were analysed separately. Transcripts for each participant group were

first read in their entirety by the second author (KH) to gain an overview of the data set as a whole. Content relevant to the purpose of the study was extracted and formed the basis of analysis. Meaning units, defined as "words, sentences or paragraphs containing aspects related to each other through their content and context" (Graneheim & Lundman, 2004, p. 106) were identified and labelled with a descriptive code that represented a condensed version of the meaning unit. Based on these descriptive codes, meaning units were compared for similarities and differences and sorted into categories. To add rigour, a peer review of the data analysis was completed by the first (AC) and third (EF) authors through reflection on and discussion about categories identified and classification of descriptive codes.

7.4 Results

7.4.1 Experiences of individuals with aphasia

Overall individuals with aphasia reported positive experiences of providing training to students and HPs and indicated that they would like to be involved in future CPT programs, or would recommend other PWA to become involved. Four categories were derived from analysis of data to describe participants' perspectives about the CPT. The first two categories were: (1) the need for CPT; and (2) important messages about aphasia to include in training. The final two categories related to the perceived benefits of the training. Participants identified that the training had to be a *"two-way street"* with one participant stating, *"I've got to get something out of it. And so do they."* The final two categories reflect this dichotomy, elucidating (3) the participants' perceptions of benefits of the training to others; as well as (4) personal benefits to themselves. The PWA reported nil 'negative aspects' of the CPT program.

7.4.1.1 The need for CPT – "It's good to let everybody know"

Within both focus groups / semi-structured interviews there was a strong belief among the PWA about the necessity of CPT programs. Participants described the need for HPs and HP students to be trained, but also advocated for more universal training within the community: "*Help us. And from a professional people, from tradesmen and from shopping… doctors and nurses, the people, the - even the guys that go - you give the car to, to the mechanic working on a car."* Furthermore, participants shared their perception that families of those with aphasia did not receive adequate training: *"At first, the family don't know… and that's why it's good to let everybody know."*

In describing the need for more CPT a number of participants highlighted negative experiences in hospital as a result of lack of training about aphasia:

> *See my experience with, ah, aphasia and that, when I was in hospital I couldn't - couldn't communicate - communicate with the nurses… And that's wrong. Because they don't have enough time… It's just that they didn't have enough time to - for us… And, ah, you can't talk to anyone else… Even the doctors, they just say, "Yeah, no, he's right, you're right."… That's wrong… they don't tell you… But we could understand… But they wouldn't tell us… And we can't get it out to tell them*.
>
> *Sometimes I remember one nurse said to one guy - he's - he had aphasia and you know how sometimes when all you can do is swear… This woman really went - the nurse went really mad to the young guy. And—and I thought, he's aphasia… It's so important that staff that work with patients, you have to, like all of us realise* [about aphasia].

Participants also discussed the fact that more training was needed because of the prevalence of aphasia (*"Because aphasia's a lot more common than people realise it"*) and the general lack of awareness about aphasia within the community (*"There's nothing about it [in the community]"*).

7.4.1.2 Important messages about aphasia to include in training – "Because then they'd be able to understand"

Participants with aphasia also expressed what they believed were core messages about aphasia that should be incorporated in CPT programs. These core messages represented both what they hoped HPs or HP students had gained from the existing program, and more broadly, what they believed everybody in the community should know about aphasia. For HPs and HP students, in addition to basic knowledge of aphasia, the PWA emphasised the need for understanding of the everyday life impacts of aphasia. One participant stated, *"Just not from the stroke… just from family stuff… because then I think then they can understanding."* Another participant commented:

> *And I was able to tell them how I felt. About everyday life. How my whole life had changed. My work and all of that sort of thing… I'm sure - I think they were quite surprised how they - it affects people. Your speech, as well as your well-being, how you feel and especially the frustrations… To - yeah, to learn that.*

Two other facts that participants with aphasia believed were important for people to know were that everybody with aphasia is different and that aphasia does not affect intelligence:

> *They said… "But how come you're not like him?" I said, "'Cause I'm not like him. But this is my case." But there's plenty of cases around… different people.* [Researcher: So they need to realise that aphasia is different for everybody?] *That's right. And also about it's about different times of rehabilitation."*
>
> *And make a point, a few points. One we're not brain - the mind's not damaged [intelligence is not damaged] And they've got to get that. For me, the - not the - the training changed when I made that point. Because everybody normally has - they all say we damaged somehow…* [Researcher: …the most important thing for people to realise is that your intelligence is not affected?*] Yeah.*

Finally, individuals with aphasia discussed information specific to communication that they wanted people interacting with them to learn, including the need for extra time to speak and for other people not to put words into their mouths: *"I told them, don't put your - the words to - to my - in my mouth."*

7.4.1.3 Benefits of training to others – "It helped her a little bit she reckoned"

When discussing their experiences of providing training, participants with aphasia described how they valued the opportunity to help others and their belief that the training had benefitted HPs and HP students and was therefore worthwhile. A number of participants were motivated to be involved in the training by a desire to assist others. One said, *"And I'm also of an age, like I've had my own life. And so I'm more than interested in making - helping people."* For some participants there was also a desire to improve services for future stroke survivors with aphasia by providing training to staff and students: "*Or to help - it could me, my kids, my granddaughters, with stroke, that's all I wanted to help other people."*

There was a general perception that HPs and HP students were interested in and valued the training participants had provided. *"Everyone there was really, really glad,"* one participant commented, with another adding: *"And most - most want to get - they want to see us and meet us, and listen to what they have to – what we have to say."* Participants also perceived that staff and in particular students had learnt from the training:

> *And I found the students were great, that was in theory not in practical. And we could bring the practical to them.*

I think, with the training, is really good because when the students start they really want to - they get very - very - their enthusiasm, and the enthusiasm they sometimes put the words in your mouth. So when they do this training and they find out what it's like to have aphasia, she's - it's like the lights come on. They suddenly realise, they step back. Which – and that's really good for the students.

7.4.1.4 Personal benefits to me – "Because it helps me…"

Participants described a wide range of personal benefits from their involvement in the program. These benefits included:

- The opportunity to meet new people and enjoy conversation: *"And I had a great - great time with two students… We travelled - I think, spoke about everything. And we got on well at that point"*
- Talking practice: *"Because, ah, it helps me to, ah, get the words out… Ah, getting myself to talk to other people"*
- Gaining confidence to persevere: *"I thought I might feel like I'm not stupid but, ah, plastic - plastic – spastic… So I had to get over that and, yeah, slowly got better* [more confident]*"*
- Practising skills important for regaining employment: *"And it helps me with, ah, my work experience and that, so which is good."*

One participant appreciated the opportunity to be involved in the program at a time that he would have otherwise been discharged from his engagement with the participating hospital's rehabilitation services, while for others providing training was seen as part of a new life and new challenges post-stroke: *"Now this is the next part of life you know. To keep going with it so. So you just got to go back to start again. And it helps… But to teach someone else, then you can see what's - that you're getting better too."* A number of participants also valued participating in the training as part of a group with others who had aphasia: *"But it is a very useful thing to get in and with these people* [our aphasia group] *and be able to talk to them."*

7.4.2 Experiences of HP students

HP students discussed positive aspects of the training and how they perceived they had benefitted from it, as well as providing two suggestions for how the training could be improved. The first four categories were: (1) the learning experience from CPT; (2) useful strategies to facilitate interactions with PWA; (3) the capacity to build confidence through non-assessed learning

outcomes; and (4) the identification of future usefulness with the acquisition and progression of career development. The final category related to improvements to the CPT program and initial presentation to HP students.

7.4.2.1 Practical learning experience – "I have to put something into practice to understand"

HP students valued the practical learning gained through participating in the training. OT and PT students discussed their perception that previously they had learnt only basic theoretical knowledge about aphasia. They therefore appreciated the opportunity to learn practical strategies to enable communication*: "In the lecture you don't learn strategies, you just learn what it is"; "We get like a list of words—definitions"*; *"We don't really learn much about communicating."* Although SLP students reported prior knowledge of communication strategies, they valued real-life practice applying their knowledge: *"It was good to—like for me to separate the textbook learning from the practical application"*; *"It's good to have an opportunity to put those strategies into use."* HP students also emphasised the value of feedback from PWA and the opportunity to learn about individual preferences: *"It was nice to get the feedback from their end too… to actually see [what] everyone prefers."*

The experience developed the HP students' understanding of the use of specific strategies. These included the need for patience and giving the person with aphasia time to talk (*"how much patience you needed to—listen to the—someone to hear what they wanted to say"*)*;* slowing down rate of speech (*"it's nice to slow down your speech but also if it's too slow then that's not helpful either"*); and the use of alternate methods of communication such as drawing and writing (*"there were some times in the conversation that we could use a bit of drawing or bit of writing but it flowed so well"*).

7.4.2.2 Gaining confidence in non-assessed setting – "Increase in confidence"

Another benefit of CPT discussed by HP student participants was the confidence they had gained in communicating with PWA. One student stated, *"It gave you the confidence to know that you're doing the right thing,"* with another adding, *"Yeah,* [it] *makes it a little less scary."* In particular, students perceived they had benefitted from the informality of the training and the fact it was not assessed or part of their formal academic or clinical coursework:

> *I think the climate that it was done in and like how it's not stressful and like it's just open—takes some of the stress off that you get when you're in prac when you're*

constantly being sort of assessed for everything, it makes it more comfortable and realistic.

7.4.2.3 Usefulness for future career – "Ideas of what to use in the future"

HP students also commented on the applicability of the training and the knowledge and skills they had gained to their future clinical education placements and careers. One PT student stated: *"I think it was certainly an experience that I valued and—that will help me in future pracs"* For one SLP student the training provided validation of her career choice: *"I find that interesting to see that it* [SLP] *does have an impact and what I'm doing is what I want to do."*

7.4.2.4 Suggested improvements – "Because then I think more people would show up"

Finally, HP students provided two suggestions for improving the training. First, they reported they would have liked to have a conversation with more than one person with aphasia as part of the training: **"***So even though it takes like another hour or an hour and a half longer—I would have preferred to talk to more than one person."* More specifically, they believed it would be beneficial to gain experience speaking with people who have differing severities of aphasia. Second, HP students suggested that more emphasis needed to be placed on the fact that the training involved real-life experience talking with PWA when advertising the program to future students: "*More people would have came if they realised it was actually like this."*

7.5 Discussion

The aim of this study was to explore the perceptions of individuals with aphasia and HP students about the current CPT program and their experiences of participating in a CPT program. Qualitative data from the current study have provided evidence of the perceived benefits of a CPT program being implemented as part of university coursework for HP students. Further, HP students also reported that using PWA in a 'train the trainer' model added value, contextual relevancy and saliency to the content provided. PWA included in this study described an underlying belief in the program and highlighted the need for training across a variety of settings (institutional and community). They also had strong ideas about what should be included in the training program and the core information that needed to be conveyed to the training participants. The personal benefits of participating in the program discussed by the PWA in this study were consistent with previously reported benefits of increased confidence and purpose by PWA engaging in volunteer work (Pearl et al., 2011). Other benefits reported by Pearl et al. (2011) included the need for an individual and activity to have identified relevance in order to be successful, and the need for informed decision-making through presentation of all information and discussion of relevant factors and associated choices (Pearl et al., 2011). For student participants, key benefits reported included improved

confidence in their ability to communicate with PWA and the opportunity to gain practical learning experience in a non-threatening, non-assessable setting. The increase in confidence reported qualitatively in the present study reflected quantitative confidence ratings that have previously been reported by students before and after the completion of CPT (Cameron et al., 2015, 2017a; Finch et al., 2013).

In the current study, HP students reported a change in both their perceptions and their practical application of communication strategies due to increased understanding of aphasia and methods to engage with PWA. Similarly, the perspectives of qualified HPs in a post-acute rehabilitation unit were also investigated in a qualitative study by Horton el al. (2016b). Notably, HP clinicians in this study also described being able to change their interactions due to an increased awareness of the communication needs of PWA after completing CPT. There was also a reported increase in confidence by some of the HPs included in the aforementioned study; however, the author could not determine if the awareness of strategies and subsequent improvement of skills was directly related to this perceived increase in confidence (Horton et al., 2016b), sentiments shared by the authors. Horton et al. (2016b) identified that the cognitive and emotional challenges of PWA could impede upon HPs' ability to interact and develop rapport. This included the participants' perception that having severe aphasia was a barrier to successfully using CPT strategies, in addition to environmental factors (i.e. noise and time constraints) when engaging with PWA in a ward setting. A systematic review by Simmons-Mackie et al. (2010) concluded that CPT provides a cost-effective model of training, resulting in outcomes that are largely generalisable across PWA and different communication partners (for example, family members, HPs), thus providing foundational support for the implementation of CPT in addition to the opinions and experiences shared by the participants included in this qualitative study. Findings from the present study have added to the current literature by exploring the HP students' perspectives about the benefits of the training during university training. However, it was also proposed by Simmons-Mackie et al. (2010) that future studies could investigate the characteristics of participants and if there is any relationship between participant characteristics and CPT outcomes.

As previously mentioned, the PWA who participated in the present study were provided with visual material (e.g. written, pictures), communication aids and skilled SLP facilitators to support their engagement in the focus group / semi-structured interview. Interestingly, McMenamin et al. (2015a) found that PWA involved in CPT and a subsequent focus group session (as 'co-researchers') reported the Participatory Learning and Action model to be beneficial. It enabled peer support and acknowledgement, more in-depth understanding of communicating in various contexts and highlighted the need for perseverance to change communication styles. Further, the empowerment and validation of the PWA included as 'co-researchers' in this study should not to be

under-estimated and highlights the possibility for consideration of similar dynamics in future research to capture the emic experience of living with aphasia. Simmons-Mackie et al. (2010) also discussed the implication from existing literature that CPT improves more than just communication participation, highlighting that effects on PWA can be noted in QoL and overall well-being. Preliminary data on the positive effects of participating in the CPT program for PWA's communication and the impact on broader participation and QoL through the use of quantitative measures in the form of questionnaires and scales have been reported (Simmons-Mackie et al., 2010). However, more in-depth research is needed in this area.

7.5.1 Recommendations

Based on the results, some recommendations for setting up the CPT program with HPs and HP students in other departments / sites would include identifying PWA to participate and involving them in a 'co-researcher' type role to enhance learning and engagement outcomes. Allowing sufficient time and offer flexible delivery methods to support uptake by HPs and HP students. Also, making explicit to the HPs and HP students the involvement of PWA and the opportunity for real time practice of strategies outside of a clinical exchange. Finally, it would be important to ensure communication supports are provided for both the training and any post-training debriefing sessions.

7.5.2 Strengths, limitations and future research

It is important to acknowledge that this study had several methodological strengths and limitations. First, a limitation was that the sample was self-selected and may not have been entirely representative of the student population. Second, with regards to HP student feedback, the large number of the participants precluded extensive in-depth discussion, limiting the depth of information obtained. Therefore, rich, descriptive data are somewhat lacking in the present study's findings for HP students. Originally, the feedback component for HP students was intended for internal use by the research team as a quality improvement process for improving the training program. However, given the lack of qualitative data in this area of research, the valuable comments received from the HP students necessitated further analysis and reporting in an accessible way for others working in the field. These preliminary findings indicate that a more in-depth study of the student experience would be warranted.

The authors also acknowledge the challenges in conducting a focus group with PWA. As the PWA who participated in the focus group / semi-structured interview all knew each other and the experienced SLP mediators well, they were supportive of one another and had all received training in supportive conversation. Further, care was taken by the SLP mediators to address each participant and provide them an opportunity to express themselves. This history of mutual respect

between the PWA participants and the SLP mediators was considered to be beneficial for engagement and open expression of ideas and beliefs within the focus group context.

With respect to the training program, it is acknowledged that HP students may have had somewhat heterogeneous experiences because the level of aphasia severity varied across each PWA. Hence, for HP students, the level of skill, or moreover the use of strategies varied for each interaction depending on which PWA HP students conversed with. Therefore, it may be of interest to consider HP student participants engaging in multiple conversations with PWA of varying levels of severity not only broaden their experience but also to allow for the adaptation and application of the strategies taught. Correspondingly, the findings from the updated systematic review carried out by Simmons-Mackie et al. (2016) emphasised the need for more high-quality clinical trials to be conducted in the healthcare setting to expand upon the current evidence and further examine implementation of CPT in these settings. To this end, it may be beneficial for future research also to consider potential 'dosage' effects related to the number and duration of opportunities for students to converse with PWA before, during or after CPT training.

7.6 Conclusion

Active participation, through the inclusive and accessible environment created by CPT may be considered the ultimate outcome for PWA within a healthcare setting (Horton et al., 2016b; McMenamin et al., 2015a). Both the PWA and HP students involved in this study reported perceived benefits from CPT and described a range of advantages after participating in CPT within an educational setting.

CHAPTER 8

Summary, Clinical Implications, Limitations & Future Directions, Conclusion

8.1 Summary

A communication disability is often overlooked as it is an 'invisible disability.' The communication difficulties associated with aphasia can have significant negative effects on healthcare for PWA. As described by the literature review in Chapter 1, CPT has predominately been used with families, significant others and volunteers, but only on an ad-hoc basis with HPs. It has been identified as an effective method to promote supported conversation with an individual who has communication impairments, resulting in positive outcomes for both the PWA and their communication partners. CPT can result in improved access to conversation, in addition to increased social participation for both the PWA and trained partners. It has the potential to allow PWA to reclaim a level of spontaneous, incidental interactions. Without conversation support, these interactions are largely impeded by communication difficulties and replaced instead by information driven interactions, with the main purpose being to procure specific details. Because of the importance of communication for successful healthcare interactions, the need for CPT for HPs, including SLPs, and HP students is being recognised as vital to ensure the promotion of holistic healthcare and improved outcomes.

In the current thesis, the main aims were to (1) investigate the impact of implementing a CPT program on PWA, HPs and HP students in order to determine whether there was a need for CPT training, whether CPT is a viable training method in a healthcare setting and to contribute to the evidence base for improving communication interactions for people with communication impairments accessing healthcare. A further aim was to (2) identify if a synchronous telepractice model was also an effective and feasible training option to provide CPT.

Baseline studies provided preliminary evidence to suggest that HPs and HP students reported low levels of confidence and knowledge for communicating with PWA, regardless of their discipline or years of experience. Study 2 (Chapter 3) undertook a preliminary education intervention study with 28 OT and PT students, to investigate the confidence and knowledge of non-SLP trained HP students using pre-post CPT intervention assessment. Study 3 (Chapter 4), used a cross-sectional survey to explore how confident and knowledgeable 90 HPs working within an acute tertiary hospital setting were when interacting with PWA. The HPs, who were from various allied health disciplines, collectively reported low levels of confidence, relative to their profession, in their ability to use strategies to communicate with an individual with communication difficulties.

Once it was established that HP and HP students did perceive there to be an element of under preparedness to adequately equip them to interact with PWA, a series of studies (1, 4 and 5) were conducted to investigate the use of CPT to increase the confidence and knowledge of HPs and HP students. A two parallel arm randomised controlled trial (Study 1, Chapter 2) found that knowledge about aphasia, barriers to communication, and strategies to support interactions with PWA were augmented following 38 SLP students' participation in the CPT program. Correspondingly, the HP students across studies one and two (Chapters 2 and 3) and HPs in Study 3 (Chapter 4) reported that the inclusion of a CPT program as an adjunct to coursework, clinical placements and professional development would be advantageous to ensure better outcomes for providers and consumers. Study 4 (Chapter 5) built upon the preceding studies to provide additional evidence of the positive results yielded by HPs participating in a CPT program in a hospital environment. This pre-post intervention, implementing a quasi-experimental design, captured changes in HPs' confidence and knowledge through participation in a face-to-face CPT program.

Given the fast-paced environment in an acute tertiary hospital and the rigorous demands of a university degree, the use of telepractice was explored as a possible option for CPT delivery. Technology is synonymous with health and education, with ongoing integration in daily practice to support access, engagement and usability. Study 5 (Chapter 6) was conducted to ascertain if the previously observed increase in confidence and knowledge of HPs for communicating with PWA was carried across training modalities. No superior group difference was identified between the delivery of CPT via face-to-face or telepractice for improving the confidence and knowledge of strategies for HPs engaging with PWA. Interestingly, the results of this study identified that it is the training itself that affects uptake of skills and change in both confidence and practice, not the mode of delivery, which is largely inconsequential. The outcomes of studies three to five provide

evidence to support the integration of CPT into clinical practice, due to the observed supported communication interactions between HPs and PWA, as stated by the HP participants included in these studies.

Qualitative review of the PWA and HP students was conducted using transcription analysis following a focus group and feedback sessions. The findings presented in Study 6 (Chapter 7) provided preliminary evidence for the inclusion of PWA in a CPT program, as the PWA involved acknowledged a sense of purpose from participating in the training, as well as greater confidence for interacting with different conversation partners. The HP students reported feeling more confident and knowledgeable following the training, in addition to emphasising the benefit of participating in a CPT program, prior to clinical placement or employment, in a non-assessable enriched learning environment. This qualitative study provided invaluable insight into concepts and areas deemed important by HP students and PWA for inclusion in CPT training and the way the training was administered. Such insights are crucial in tailoring training, as researchers may overlook elements that are deemed key by the PWA for HPs to be made aware. Similarly, HP students may have questions or clinical situations requiring specific problem solving that can be explored in the training to add to their clinical toolkit of strategies. It is important for researchers to have an accurate understanding of the experiences and responses of their participants, to allow for refinement and tailoring of programs to maintain beneficial training provision.

8.2 Clinical Implications

With regards to the clinical implications of this thesis, it has been established that the presence of aphasia can have various implications for the engagement of both PWA and HPs in a healthcare setting. This includes access to and delivery of information and treatment, as well as inclusion in healthcare decisions. It is anticipated that these series of studies will result in further development of a CPT program that can be accessed (either face-to-face or online) by HPs working in healthcare throughout Australia. In addition, this thesis has contributed to developing an evidence base to provide support for HP students to receive CPT training as part of their routine coursework prior to graduation. By encouraging formal practical training for communicating with PWA, an expected clinical outcome of increased CPT provision is improved communication between PWA and health practitioners. This is due in part, not just to improved awareness, knowledge and confidence but a change in HP and HP students' approach to a communicative exchange, which has previously been identified as equally as important as the presenting abilities of the person with aphasia. Improvement in communication interactions may also be anticipated to result in an increase in involvement of PWA in their treatment programs and more refined identification of rehabilitation

goals. This has the potential to ultimately increase patient and staff satisfaction and enable a more patient-centred approach to management. It is hoped that through the promotion of supported and skilled interactions between HP, HP students and PWA following a CPT program, situations deemed too challenging because of communication barriers will be minimised and both the healthcare provider and person with aphasia will feel adequately equipped and supported within their environment. Consequently, by investigating CPT with the most disempowered group in terms of communication (i.e. PWA), and capitalising on the e-health agenda by further expanding scope to include application and flexible access via telepractice facilities, it is hoped that the current contribution to the existing knowledge and research in this area will motivate changes to be made to policy and practice.

8.3 Limitations and Future Directions

In Chapters 2 to 7, a number of limitations and future directions specifically relating to each study were acknowledged. In addition to these issues already discussed, investigation is needed into the scope, breadth and relevancy of CPT to ascertain if it affects real change in terms of confidence, knowledge, preparedness and generalisation of principles into the respective workplace environments (Finch et al., 2013; Heaven et al., 2006; Horton et al., 2015; Simmons-Mackie et al., 2010). Also, it would be useful to find out whether an increase in confidence necessarily correlates to an increase in practice. The main focus of this thesis was investigating knowledge and confidence and not the skills and competencies in using what was learned during CPT. The reason for this were largely related to four main considerations (1) funding, (2) fatigue effects for PWA, (3) HPs and HP students time commitments, and (4) practice effects. Overall one of the main limitations of the studies included in this thesis was that the participants self-selected to be involved. Consequently, the participants informed the perceived levels of confidence and knowledge through self-report scales, which a) may not have been representative of the disciplines at large and b) it was difficult to determine self-reported versus actual ability. Also, no long-term follow-up measures were established to investigate maintenance of gains for HP, HP students or PWA across various time points (i.e. three, six and twelve months) for any of the included studies in this thesis. This information would be valuable to ascertain uptake, generalisability and the need for ‘refresher’ training to support ongoing maintenance of previously acquired knowledge and skills. The Connect resources were used and adapted in favour of SCA™ due to the research team undertaking training at Connect - The Communication Disability Network in London and having access to the materials and resources produced by this organisation. Connect provided Word documents in their training manual and gave permission to allow trainers to modify them for their own context. The questionnaire from Connect - The Communication Disability Network in the

United Kingdom (2007, 2011, 2013) has had a number of adaptations prior to inclusion in the studies in this thesis. Such adaptions involve the addition of a VAS to enable objective measurement of confidence and knowledge changes. Future studies could incorporate training from SCA™ to further refine and enhance the current CPT program with the use of additional materials, resources and skills. Further research is also needed with larger sample sizes, across a range of clinical settings (multi-country hospitals and universities) into the type of CPT programs that would provide long-term effects to ensure tailored implementation with relevancy and maximised translational gains into clinical practice and consumer engagement. It would also be important to examine whether trained communication partners benefitted PWA through increased involvement in their own treatment programs and rehabilitation goals, increased satisfaction of communication interactions and facilitated a more patient-centred approach to treatment. Also, another future direction would be to measure conversation behaviours and conduct analysis in relation to professional skills and attitudes.

8.4 Conclusion

The clinical importance of this work has been to provide evidence for training HPs and HP students to maximise the involvement of PWA in decisions about their own livelihood, healthcare and management. It has also provided insight into the challenges PWA face universally, practical changes that can be implemented and offers a useful tool to minimise HP and HP students' anxiety surrounding communicating with PWA. It is important to ensure that HPs and HP students have adequate confidence and knowledge of a range of potential communication strategies to support their skills, learning experiences and allow for PWA engagement. Collectively, the studies described in this thesis highlight the need for CPT to contain both formal information and an experiential learning opportunity, to capitalise on the positive effects CPT has on communication access. This is true for both PWA and trained communication partners and reveals how successfully and effectively CPT can be translated into healthcare settings either via face-to-face or telepractice. It is hoped that the findings from this thesis, coupled with existing literature and future research in this area, will provide insights into the training, design and implementation of CPT to ensure that it is salient and pertinent to all stakeholders.

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APPENDICES

APPENDIX A

UQ Experiments on Humans Including Behavioural Research - Approval Letter.

Ethics approval granted 22nd July 2011.

THE UNIVERSITY OF QUEENSLAND

Institutional Approval Form For Experiments On Humans Including Behavioural Research

Chief Investigator:	Dr Jenny Lethlean
Project Title:	Training Communication Partners
Supervisor:	None
Co-Investigator(s)	A/Prof Jenny Fleming, Mrs Danielle McGovern, Dr Steven McPhail, Dr Kyla Brown, Dr Emma Finch
Department(s):	Speech Pathology Department, PAH
Project Number:	2011000801
Granting Agency/Degree:	Speech and Language Pathology Queensland Registration Board; Queensland Health, Health Practitioner Research Grant
Duration:	31st January 2014

Comments:

Expedited review on the basis of approval from the Metro South HSD HREC (PAH) dated 16/02/2011 & 07/07/2011.

Name of responsible Committee:-
Behavioural & Social Sciences Ethical Review Committee
This project complies with the provisions contained in the *National Statement on Ethical Conduct in Human Research* and complies with the regulations governing experimentation on humans.

Name of Ethics Committee representative:-
Associate Professor John McLean
Chairperson
Behavioural & Social Sciences Ethical Review Committee

Date 22/7/2011 Signature