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Patient-Centred Communication in Audiology Education:

An Exploration of Perspectives and Practice

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Thesis abstract

Patient-centred communication is recognised as the cornerstone to quality healthcare delivery and is associated with positive patient health outcomes. It is a core component of established healthcare disciplines, such as medicine and physiotherapy and is beginning to gain recognition and curriculum space in younger disciplines such as audiology. While there has been a growth in patient communication education in the audiology curricula, studies have reported that students feel ill-prepared when communicating with patients about their hearing impairment. Research remains sparse in exploring the current gaps in communication skills education in audiology. In addition, little is known about student-patient communication in a naturalistic setting such as clinical placements. Therefore, the overarching aim of the research was to explore patient-centred communication in audiology education in an Australian context.

This research contains three studies. The first study aimed to examine the perspectives of audiology educators towards patient-centred communication. Semi-structured interviews were conducted with nine audiology program coordinators and key teaching staff to examine the barriers and facilitators to teaching patient-centred communication. Content analysis of the transcribed interviews revealed four emerging themes: *professional culture and values*, *contextual factors*, *knowledge and understanding of patient-centred communication* and *individual factors*. The findings shed light onto the competing tension between the teaching staff's value towards patient-centred communication and the biomedically-driven professional culture that places a priority towards technical skills.

The aim of the second study was to explore audiology students' perception of their own clinical communication and learning in the audiology program. In a semi-structured interview using video reflexivity, fifteen students were asked to co-view their own filmed clinical appointment and discuss areas that were most salient to them. Thematic analysis revealed the themes of *striving to be patient-centred*, *assessment shapes behaviour*, and *power relations* to have the biggest influence on students' own clinical communication. The final theme of *what students want* uncovered students' perception towards different teaching methods. These findings showed students' motivation to demonstrate patient-centred communication can be hindered by conflicting educational standards.

The final study examined two interrelated research questions: i) how do audiology students co-construct the communicative tasks in a supervised hearing assessment appointment?; and ii) how does students' communication align with the principles of patient-centred communication? Final year audiology students from two Australian universities were video-recorded during one of their university-based clinical placements. Two analytical procedures were performed using genre analysis and the development of *The Patient-Centred Analytical Framework for Audiology* to map students' patient-centred communication. Findings showed clear communication patterns in how students structured the appointment in the presence of the clinical educator. Students also demonstrated patient-centred communication skills in fostering the relationship and gathering patient information. However, shared decision-making, enablement and responding to patients' emotional concerns were rarely observed. A significant relationship was found between the clinical educators' interjection and students' patient-centred communication patterns. Collectively, these findings identified strengths and

gaps in students' patient-centred communication, and raised questions about the clinical educator's role in the provision of learning opportunities during the clinical placement.

This body of work demonstrated the complexities in teaching and learning patient-centred communication and highlighted the tension between existing barriers and enablers to the implementation of clinical communication education. Irrespective of external barriers, teaching and learning relies on educators' knowledge and understanding of patient-centred communication. This may include training educators and providing clear guidelines to strengthen the alignment between educational content required for practice, as well as skills to optimise student feedback. To change the technical and biomedical focus within the audiological culture, the development of a unified teaching framework for communication could inform teaching content and assessment rubrics. Ultimately, communication is a skill that requires the opportunity for development. This can be facilitated by integrating communication education longitudinally into the audiology curriculum. Continual reinforcement of communication skills over the course of the program will sustain students' communication learning and promote skilled communicators.

Declaration

This declaration is to certify that:

i) The thesis comprises only of my original work except where indicated in the preface;

ii) Due acknowledgement has been made in the text to all other material used.

iii) The thesis is less than 100,000 words in length, exclusive of tables, figures, bibliography and appendices, and complies with the stipulations set out for the degree of Doctor of Philosophy by the University of Melbourne.

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Preface

This thesis is my original work and, to the best of my knowledge, contains no material written by another person, except where due acknowledgement has been made.

I was responsible for the development, preparation and execution of the thesis. However, the following people have made significant contributions to this thesis as a whole and as co-authors for the manuscript. Dr Caitlin Barr and A/Prof Robyn Woodward-Kron contributed to the research plan, design, data analysis and revisions of the manuscripts contained in this thesis. I have provided a signed copy of authorisation by co-authors and declaration of thesis with publications was submitted with this thesis.

The content of this thesis does not contain work that was carried out prior to the enrolment of my research higher degree candidature.

The publication status for each of the result chapters are outlined below:

1) Chapter 4 Published by International Journal of Audiology on September 2017
2) Chapter 5 Published by American Journal of Audiology on January 2018
3) Chapter 6 Accepted for publication by International Journal of Audiology on 16th October 2018

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Personally, I think the acknowledgment section contains the most important pages of the thesis because it provides an opportunity to give recognition and gratitude to the people who have made this PhD possible.

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To my family, who never let geographical distance or time zones get in the way of quality family time. Mum, thank you for being my cheerleader from start to finish. I will always cherish

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A big shout out to my friends, especially my running fam for motivating me to stay (relatively) healthy. Thank you for our weekly runs and frivolities, not to mention talking me into doing the impossible - running a half-marathon with only 2-weeks training (not sure that last part was meant to be a thank you). And a very special shout out to my PhD buddies, Dawn and 'JuJu'. Thanks for feeding my caffeine addiction and proving there is a fun side to doing a PhD. Y'all awesome xoxo.

To my husband, my love and my sounding board. You are the kindest, most patient and *bestest* human-being I know, and I am so blessed to have you in my life everyday. Thank you for learning how to cook and keeping me alive. Thank you for not falling asleep during my practice presentations. Thank you for your enduring confidence in me even when I could not see it in myself. You are my rock.

And last but certainly not least, I could not have gone through this journey without the unconditional love of my Oddie. The many late nights that you've kept me company during my write-ups. The adoring looks and daily nudges to remind me to go for walks to get some fresh air. I hope you know how much I love you. Ring that bell!

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Presentations and Publications

Oral presentations arising from this thesis

2018

Tai, S., Woodward-Kron, R., & Barr, C. Audiology students' perspectives of enacting and learning clinical communication: A qualitative interview and video reflexivity study. The University of Melbourne, Australia: 22nd February 2018 (PD workshop)

Tai, S., Woodward-Kron, R., & Barr, C. Competing agendas and other tensions in developing patient-centred communication in audiology education: A qualitative study of educator perspectives. Audiology Australia National Conference. Sydney, Australia: 23rd May 2018 (oral presentation)

Tai, S., Woodward-Kron, R., & Barr, C. Audiology students' perspectives of enacting and learning clinical communication: A qualitative interview and video reflexivity study. International Conference on Communication in Healthcare 2018. Porto, Portugal: 2nd September 2018 (oral presentation)

Tai, S., Woodward-Kron, R., & Barr, C. Audiology students' perspectives of enacting and learning clinical communication: A qualitative interview and video reflexivity study. Melbourne School of Health Sciences: Graduate Research Student Colloquium. The University of Melbourne: 1st October 2018 (oral presentation)

2017

Tai, S., Woodward-Kron, R., & Barr, C. Patient-centred communication in audiological teaching: An exploration of student-patient communication. Australian & New Zealand Association for Health Professional Educators (ANZAHPE) annual conference. Adelaide, Australia: 12th July 2017 (oral presentation)

2016

Tai, S., Woodward-Kron, R., & Barr, C. Audiology students and patient-centred communication. Audiology Australia National Conference. Melbourne, Australia: 25th May 2016 (oral presentation)

Tai, S., Woodward-Kron, R., & Barr, C. Patient-centred communication in audiology education: A mixed methods study in audiology teaching clinics. 16th Annual Research Postgraduate Conference at The University of Hong Kong. 4th June 2016 (Awarded: Best Presenter in the *Interpersonal Relationship* category)

Tai, S., Woodward-Kron, R., & Barr, C. Audiology students and patient-centred communication. HEARing CRC symposium. Sydney, Australia: 25th May 2016 (Awarded: best poster)

Publications arising from this thesis

This thesis includes two original paper, peer reviewed journal articles and one article that is currently in press. All three papers are presented in word versions for ease of reading and incorporated in their entirety in the thesis.

4) The following publication constitutes Chapter 4.

Tai, S., Barr, C., & Woodward-Kron, R. (2018). Competing agendas and other tensions in developing patient-centred communication in audiology education: A qualitative study of educator perspectives. *International Journal of Audiology*, *57*(4), 274–282.

5) The following publication constitutes Chapter 5.

Tai, S., Woodward-kron, R., & Barr, C. (2018). Audiology Students' Perspectives of Enacting and Learning Clinical Communication: A Qualitative Interview and Video Reflexivity Study. *American Journal of Audiology*, 27(2), 219-230.

6) The following publication constitutes Chapter 6.

Tai, S., Barr, C., & Woodward-Kron, R. (in Press). Towards patient-centred communication: An observational study of supervised audiology student-patient hearing assessments. *International Journal of Audiology*.

Abbreviations

ASHA	American Speech-Language-Hearing Association
ACAuD	Australian College of Audiology
AuD	Doctorate of Audiology
AudA	Audiology Australia
AAA	American Academy of Audiology
BSA	British Society of Audiology
CE	Clinical Educator
HAASA	Hearing Aid Audiology Society of Australia
HAT	Hearing Assistance Technology
ICF	International Classification of Function, Disability and Health
OSCE	Objective Structured Clinical Examination
PCC	Patient-Centred Communication
PPOS	Patient-Practitioner Oriented Scale
RIAS	Roter Interaction Analysis Systems
UK	United Kingdom
US	United States of America
UoM	The University of Melbourne
WHO	World Health Organisation

Chapter 1. Introduction

1.1. Introduction

Communication is a skill that is often taken for granted in healthcare professions given that it is an assumed part of our everyday life (Mcewen & Harris, 2010). However, there is a growing recognition that communication is a fundamental aspect of healthcare delivery that can, and needs to be educated (Aspegren, 1999; Kurtz, 2002; Silverman, Kurtz, & Draper, 2013). In particular, patient-centred communication, characterised by establishing a therapeutic relationship, eliciting patient narratives and acknowledging patients' emotions have been associated with positive patient outcomes (de Haes & Bensing, 2009; Michie, Miles, & Weinman, 2003; Ong, Visser, Lammes, & de Haes, 2000; Pinto et al., 2012).

In the discipline of audiology, educational programs have traditionally focused on biomedical content and technical competencies with minimal emphasis on the psychosocial impact of hearing loss (Berg, Canellas, Salbod, & Velayo, 2008; English, Mendel, Rojeski, & Hornak, 1999). While recent studies have advocated patient-centred communication to influence patients' hearing rehabilitation outcomes (Laplante-Lévesque, Hickson, & Worrall, 2012a; Poost-Foroosh, Jennings, Shaw, Meston, & Cheesman, 2011), little is known about the role education plays in training future audiologists. At present, there is also scarce research on how communication is taught and learned in audiology programs. This chapter provides a background to the research and an overview of the chapters in the thesis.

1.2. Study Background

Patient-centred communication is advocated as an integral component of delivering quality healthcare (Pinto et al, 2012). By adopting a holistic approach to care and investing in a therapeutic relationship, it has been associated with increased patient adherence to recommendations and improved health outcomes (Mead & Bower, 2000; Pinto et al, 2012). In several health professions, including medicine (Brown & Bylund, 2008) and physiotherapy (Parry & Brown, 2009), patient-centred communication is regarded as a core component of the curriculum.

In the discipline of audiology, while research into patient-centred care is relatively new, studies have shown that audiologists demonstrating patient-centred communication skills can influence the perceived quality of service and rehabilitation outcomes (Grenness, Hickson, Laplante-Lévesque, & Davidson, 2014a; Laplante-Lévesque, Hickson, & Worrall, 2010; Poost-Foroosh et al., 2011). However, despite these benefits, recent studies have revealed a discordance between theory and clinical practice; that is, patient-centred communication was rarely adopted by audiologists during a clinical encounter (Ekberg, Grenness, & Hickson, 2014; Grenness, Hickson, Laplante-Lévesque, Meyer, & Davidson, 2015a, 2015b). This is in spite of audiologists' self-reported preferences for patient-centredness (Laplante-Lcvesque, Hickson, & Grenness, 2014). While a number of factors can hinder the enactment of patient-centred communication, a viable reason may be the lack of training. Education plays an important role in equipping students with knowledge and skills for clinical practice (Pascoe & Singh, 2008).

Existing research into clinical communication education in audiology has predominately resided in the United States, where there is an agreement amongst researchers that further communication skills training is needed in graduate audiology programs (English & Weist,

2005; English & Archbold, 2014; Flasher & Fogle, 2004; Meibos et al., 2017; Muñoz, 2018). While the past decade has seen an increase in communication skills training in the audiology curriculum (English & Weist, 2005; Whicker, Muñoz, Butcher, Schultz, & Twohig, 2017), insufficiencies in communication ability have been found to persist amongst AuD students (English & Zoladkiewicz, 2005; Makhoba & Joseph, 2016; Meibos, Preston, & Twohigi, 2016). This highlights a need for an in-depth exploration of the factors influencing patient-centred communication education in audiology.

1.3. Research Aims/Questions

To date, there is sparse research exploring patient-centred communication education from a teaching and learning perspective. Additionally, there is no known empirical evidence to help identify the current state of student-patient interaction in a naturalistic setting or how audiology students enact patient-centered communication. To build on the small existing body of knowledge, the overarching aim of this research is to explore patient-centred communication in audiology education. The specific aims and research questions are:

1. To examine the perspectives of audiology educators towards patient-centred communication, including barriers and facilitators to implementing and developing patient-centred communication skills in the university and clinical settings.
2. i) To explore audiology students' perception of their clinical communication skills during a university-based clinical placement.

   ii) To explore their perspectives of learning clinical communication in the audiology program.

3. i) How do audiology students co-construct the main communicative clinical tasks in a hearing assessment appointment under the supervision of a clinical educator?

   ii) How does students' communication align with the principles of patient-centred communication?

Findings from this study will help identify the strengths and gaps in communication skills education in Australian audiology programs and provide pedagogical recommendations to strengthen the audiology curricula and hearing care delivery.

1.4. Thesis Outline

This research contains three studies that addressed each of the research aims/questions. This chapter provides an overview of the thesis as a whole. In chapter 2, an expansion into the relevant literature on patient-centred communication and audiology education is presented, including the current gaps that motivated this research. Chapter 3 provides the rationale of the methodologies used in this research, including the overall study design, as well as an overview of the three studies that address the research aims and questions. In chapter 4, the findings of the first study are presented to address the first research aim: To examine the perspectives of audiology educators towards patient-centred communication, including barriers and facilitators to implementing and developing patient-centred communication skills in the university and clinical settings. Chapter 5 presents the findings from the second study to address the research aims: i) to explore audiology students' perception of their clinical communication skills during a university-based clinical placement, and ii) to explore their perspectives of learning clinical communication in the audiology program on students'

perspectives. Chapter 6 presents the third study that focuses on students' communication in a naturalistic environment to address the research questions: i) How do audiology students co-construct the main communicative clinical tasks in a hearing assessment appointment under the supervision of a clinical educator? ii) How does students' communication align with the principles of patient-centred communication? Finally, chapter 7 is a synthesis of the body of work in this research including strengths and challenges that were encountered. The discussion chapter also highlights the recommendations and future research directions.

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Chapter 2. Literature Review

2.1. Introduction

The purpose of the chapter is to present a critical review of the key literature and rationale for the research aims and questions of this theses. This chapter will begin by providing an overview of the impact of a hearing impairment in adults and the role of audiologists in hearing care. Following this, the importance of effective patient-clinician communication will be discussed borrowing from the literature of medical education, followed by recent findings on patient-centred communication in the audiology discipline and presenting the gaps in hearing care communication. Lastly, the role of education in developing students' communication skills will be discussed from a medical education perspective coupled with current practice and opportunities for improvement in audiology communication education.

2.2. Hearing impairment

On a global scale, hearing impairment has been ranked as the fourth highest cause of disability (WHO, 2018). In a recent report, the World Health Organisation (WHO) estimated that over 5% of the world population, or approximately 466 million people have a disabling hearing impairment with a projected rise of 900 million by 2050 (WHO, 2018). In Australia, it was estimated that 14.5% or 3.6 million people have a hearing impairment (Deloitte Access Economics, 2017). Some of the key risk factors for an acquired hearing impairment include chronic ear infections, exposure to ototoxic drugs and the increase of recreational noise

exposure (WHO, 2018). Additionally, the rate of hearing impairment increases with age, with people over the age of 50 showing a greater prevalence (Deloitte Access Economics, 2017). Presbycusis or age-related hearing loss is the most common form of hearing impairment affecting older adults (Cruickshanks et al., 1998; Wilson et al., 1999). With an ageing population, it is predicted that one in five individuals will be affected by a hearing impairment by 2060 (Access Economics, 2006; Deloitte Access Economics, 2017).

The impact of hearing impairment and influence on a person's wellbeing carries significant financial costs (WHO, 2017). The loss in productivity, cost of informal carers, and health system expenditure is estimated to exceed 750 billion international dollars globally (Access Economics, 2006; WHO, 2017). In Australia, the health system includes medical consultations with a general practitioner, medical specialists and other health professionals, as well as hospital running costs, pharmaceuticals and research into hearing issues (Deloitte Access Economics, 2017). In 2017, it was estimated that the total health system expenditure was $881.5 million or $245 per person with a hearing impairment (Deloitte Access Economics, 2017). The reduction in a person's productivity (e.g. employment, premature retirement, diminished ability, sick days) due to his/her hearing impairment were estimated to cost $12.8 billion or $3,566 per person in 2017 (Deloitte Access Economics, 2017). The financial costs on the healthcare system and associated losses in productivity not only affects the individual with a hearing impairment, but extends to the employer and the global economy (Deloitte Access Economics, 2017).

2.2.1. The impact of acquired hearing loss in adults

The WHO's International Classification of Functioning, Disability and Health (ICF) has been used to provide a biopsychosocial framework into the consequences of hearing impairment (Grenness, Meyer, Scarinci, Ekberg, & Hickson, 2016; Hickson & Scarinci, 2007; Meyer, Grenness, Scarinci, & Hickson, 2016). For age-related hearing impairment, the physiological impact of hearing loss includes the structural changes and deterioration of the hearing organ, which typically result in a progressive loss in detecting high frequency sounds (Katz, Burkard, & Medwetsky, 2002). As a result, the associated activity limitations include reduced speech intelligibility, impaired sound localisation and difficulty understanding speech in background noise (Caissie, Dawe, Donovan, Brooks, & MacDonald, 1998; Gates & Mills, 2005; Lind, Hickson, & Erber, 2004; Tye-Murray, 1992). Communication difficulties can result in participation restrictions such as the person's ability to join in conversations (Hickson & Scarinci, 2007; Meyer et al., 2016). Contextual factors including the individual's environment (e.g. family, friends, healthcare professional) and personal characteristics (e.g. age, personality) are also considered in the impact of the person's overall function and disability (Meyer et al., 2016; WHO, 2001).

Untreated hearing impairment can have detrimental effects on a person's wellbeing and quality of life (Abrams, Chisolm, & McArdle, 2005; Bess, 2000; Kochkin & Rogin, 2000). A consequence of communication breakdown derived from hearing impairment is social withdrawals and alterations in a person's communication behaviour (Caissie et al., 1998; Heine & Browning, 2002; Hetu, Jones, & Getty, 1993). The association between hearing impairment and negative emotional consequences have been reported to include reduced self-esteem, low confidence, and depression (Christian & Dluhy, 1989; Heine & Browning, 2002; Hogan,

O'Loughlin, Miller, & Kendig, 2009; Weinstein & Ventry, 1982). In addition to the person's emotional wellbeing, there is growing research on the relationship between the deficit in auditory information and cognitive decline (Gurgel et al., 2014; Lin et al., 2013; Lin, Thorpe, Gordon-Salant, & Ferrucci, 2011). While the evidence for a causal relationship is yet to be found, a longitudinal brain imaging study showed a greater reduction in brain volume for individuals with hearing impairment (Lin et al., 2014). And finally, there are also associations between an increased risk of falls and hospitalisation in older individuals with hearing impairment and higher mortality risks (Genther et al., 2015). Collectively, the consequence of an untreated hearing impairment demonstrates a significant impact on an individual's functioning and quality of life (Chia et al., 2007; Ciorba, Bianchini, Pelucchi, & Pastore, 2012).

2.2.2. Audiological Rehabilitation

Audiological rehabilitation can help reduce the consequences of hearing impairment by helping individuals and their family manage and minimise the disability (Chisolm et al., 2007; Hawkins, 2005). Rehabilitation options include education about the impact of hearing loss, communication strategies to improve speech recognition (American Academy of Audiology, 2004) and use of hearing assistive technologies (HAT) including hearing aids (Chao & Chen, 2008; Chisolm et al., 2007; Montano & Spitzer, 2009). Hearing aids function to amplify sounds to improve audibility and counteract sensory deprivation stemming from a hearing impairment (Dillon, 2012). The benefits of hearing aids can help reduce the psychological, social and emotional effects of hearing impairment, and therefore improve one's quality of life (Chisolm et al., 2007; Kochkin, 2007). While hearing devices improve audibility, there are limitations in

restoring hearing back to normal or alleviating all communication difficulties (Metselaar et al., 2009).

Given the consequence of hearing impairment extends beyond the physiological functions, communication programs that consider the psychosocial aspects of hearing impairment can help reduce the perceived activity limitation and participation restrictions (Chisolm, Abrams, & McArdle, 2004; Hickson, Laplante-Lévesque, & Wong, 2013). For instance, communication programs, either individual or in groups (Boothroyd, 2007; Hawkins, 2005; Laplante-Lévesque, Hickson, & Worrall, 2010c; Prendergast & Kelley, 2002), can contain components of educating patients on communication strategies, information about hearing and device management and counselling to improve patients' participation (Boothroyd, 2007; Hawkins, 2005; Hickson et al., 2013; Preminger & Yoo, 2010). This holistic approach to hearing care that is tailored to the patient's hearing needs is beginning to gain recognition in the audiology profession (ASHA, 2018; BSA, 2016).

2.2.3. Audiologists' Role in Audiological Rehabilitation

Audiologists play a significant role in the provision of audiological rehabilitation. Despite audiology being a young profession, it has experienced substantial shifts in the scope of practice and the provision of audiological rehabilitation. Audiology initially focused on helping service men and women who suffered from a hearing impairment during World War II (Katz, 2015); audiologists (at that time, not formally trained as audiologists) performed basic hearing tests and provided rehabilitation (Katz, 2009; Martin & Clark, 2015). By the late 1970s, amplification options had burgeoned as had behavioural assessments to accurately diagnose

the site-of-lesion (Katz, 2009; Pichora-Fuller & Singh, 2006; Ross, 2007; Singh et al., 2016). The lack of sophisticated amplification meant the audiology profession needed to focus on communication strategies (e.g. lip reading and auditory training), device usage and counselling patients on their hearing difficulties (Clark & English, 2004; Katz, 2015). With the technological advances in amplification options, namely hearing aids, attention expanded towards fitting and fine tuning (Dillon, 2012), and away from patient-clinician interaction. Further developments in physiological measurements also took place to add greater breadth into the profession's understanding and evaluation of the auditory system (Katz, 2015). The changing scope of practice has seen audiologists take on multiple roles, namely to identify, evaluate and manage auditory disorders, as well as to help individuals cope, improve or prevent further auditory deprivation (Gelfand, 2016; Katz, 2009). However, as the profession was brought about from a technically-focused medical model, an emphasis on technical skills remain in the culture of audiological practice.

2.2.4. Current Issues in Audiological Rehabilitation

Although hearing aids are the most cost effective hearing rehabilitation option (Chisolm et al., 2007), hearing aid uptake remains poor despite technological advancements (Gopinath et al., 2011; Hartley, Rochtchina, Newall, Golding, & Mitchell, 2010; Kochkin, 2007; Lin et al., 2011; Salonen et al., 2013). In Australia, only 33% of adults with a hearing impairment over the age of 50 obtain hearing aids (Hartley et al., 2010). Furthermore, of the people who have been fitted with hearing aids, a significant proportion have not worn the devices consistently (Chia et al., 2007; Gopinath et al., 2011; Hartley et al., 2010). It has been reported that adults with a

diagnosed hearing impairment generally wait 10 years before seeking a hearing professional (Davis, Smith, Ferguson, Stephens, & Gianopoulos, 2007). The low help-seeking and ineffective provision of hearing devices not only impacts individuals with a hearing impairment, but carries financial implications for government funding bodies. The Hearing Services Program provides rebates for eligible individuals in Australia and was the largest expenditure in 2017 within the health system attributed to hearing impairment (HSP, 2018; Deloitte Access Economics, 2017).

To investigate factors contributing to low hearing aid uptake, research has predominately focused on technological features such as sound quality, noise reduction and speech intelligibility (Johnson, Danhauer, & Krishnamurti, 2000; Meister, Lausberg, Kiessling, Wedel, & Walger, 2002; Meister & von Wedel, 2003) and patient factors (Humes, Wilson, Barlow, Garner, & Amos, 2002; Humes, Wilson, & Humes, 2003; Knudsen, Oberg, Nielsen, Naylor, & Kramer, 2010; Meyer & Hickson, 2012). In a review by Meyer and Hickson (2012), it was found that hearing aid adoption was influenced by non-audiological or technical factors. That is, factors relating to self-reported hearing disability, beliefs and attitudes towards hearing aids, support of significant others and health professionals contributed to patients' decision to obtain hearing aids (Meyer & Hickson, 2012). This finding was later supported by a retrospective study on 307 older adults where similar non-audiological factors influenced hearing help-seeking (Meyer, Hickson, Lovelock, Lampert, & Khan, 2014).

Evidence towards non-audiological factors sparked further studies into patient-audiologist interactions on hearing rehabilitation outcomes. For instance, in a mixed methods study, Poost-Foroosh and colleagues (2011) investigated factors in the patient-audiologist interaction that affected hearing aid uptake. The findings showed six of the eight factors were related to audiologists' skills including: ensuring patient comfort, understanding and meeting patient

needs, demonstrating patient-centred traits and actions, acknowledging the patient as an individual, conveying device information and supporting choices and shared decision-making (Poost-Foroosh et al., 2011). These features drew attention to the role of the audiologist and their communication to influence hearing rehabilitation outcomes.

In a Delphi review, 26 stakeholders including hearing professionals, researchers, patients, and representatives from both private and public health sectors were asked to identify processes to support self-management in adults undergoing audiological rehabilitation (Barker et al., 2015). A consensus amongst the panel ascertained a number of clinical skills that may improve patients' self-management and ability to live well with their hearing loss. Most of the clinical skills are in relation to the clinician's communication such as the ability to ask open ended and probing questions, being a good listener, not to use jargon, and to explore the patients' narrative about his or her hearing loss (Barker et al., 2015).

Further studies on patients' perception have also found audiologists' communication and interpersonal skills to influence the perceived quality of service and rehabilitation outcome (Laplante-Lévesque, Knudsen, et al., 2012; Laplante-Lévesque et al., 2010a). In a qualitative study, patients from four countries (Australia, Denmark, UK, and USA) with varying hearing rehabilitation experiences (from *never sought help* to *successful hearing aid users*) were interviewed on their help-seeking and audiological rehabilitation perspectives (Laplante-Lévesque, Knudsen, et al., 2012). Content analysis found participants valued their audiologists' interpersonal skills and demonstration of genuine interest in the patient (Laplante-Lévesque, Knudsen, et al., 2012). This finding echoed with other studies where patients valued audiologists who listened and showed intent in the patients' story (Grenness et al., 2014a;

Laplante-Lévesque et al., 2010a). Collectively, these studies highlight the patient-audiologist interaction play a pertinent role in audiological rehabilitation.

2.3. Effective Patient-Clinician Communication

Across different health professions, effective communication is a fundamental element in delivering quality health services (Cooper, Smith, & Hancock, 2008; English & Archbold, 2014; Hughes, Bamford, & May, 2008; Makoul, 2001a; Potter, Gordon, & Hamer, 2003; Silverman, Kurtz, & Draper, 2013). In particular, extensive literature exists where a patient-centred approach to communication is associated with improved patient outcomes (Epstein, 2006; Hall, Roter, & Katz, 1988; Jackson, 2005; Stewart, 1995; Zolnierek & DiMatteo, 2009). In this research, communication is defined as a two-way process using a combination of verbal and non-verbal behaviours (Higgs, Ajjawi, McAllister, Trede, & Loftus, 2008; Pinto et al., 2012). While there is growing research into patient-audiologist communication (Coleman et al., 2018; Ekberg et al., 2014; Grenness et al., 2015a, 2015b; Muñoz, Ong, Borrie, Nelson, & Twohig, 2017), much of the work exists outside of the audiology discipline (de Haes & Bensing, 2009; Park et al., 2018; Scholl et al., 2014). To understand the basis of patient-centred communication, this section will first draw on the literature from other healthcare disciplines to address the philosophical stance of patient-centred care, followed by patient-centred communication and its role in audiology.

2.3.1. What is Patient-Centred Care?

Patient-centred care has been internationally recognised by policy makers as an approach to deliver quality healthcare (e.g. Australian Commission on Safety and Quality in Healthcare, 2011; National Academies of Sciences Engineering and Medicine, 2018; The King's Fund, 2010). The concept of patient-centred care is built on a holistic perspective to patient care with an emphasis on establishing a partnership between the patient and their healthcare provider (Bensing, 2000; Mead & Bower, 2000; Roter, 2000). This is in contrast with the doctor-centred or biomedical approach where the primary focus is placed on the illness and the physical examination with little emphasis on the social, emotional or individual factors surrounding the patient (de Haes, 2006; Engel, 1977). As a consequence, the patient's voice is largely absent and the power imbalance has been associated with non-adherence to treatment recommendations (Hellin, 2002; Mead & Bower, 2000). The healthcare literature has used client-, person-, and relationship-centred care to signify the focus towards the patient as an individual and acknowledgment of the impact on relationships (Hughes et al., 2008). For the purposes of this research, the term patient-centred care will be used as an overarching concept to capture the balance in understanding the illness and the person as an individual (Balint, 1969).

Different definitions of patient-centred care have been proposed across healthcare disciplines showing profession-specific variations (Cooper et al., 2008; Grenness et al., 2014a; Hiller, Guillemin, & Delany, 2015; Law, Baptiste, & Mills, 1995; Mead & Bower, 2000; Potter et al., 2003). For instance, in physiotherapy, communication is perceived as the most important dimension of patient-centred care that plays a central role in enforcing other dimensions during the clinical encounter (Cooper et al., 2008). The use of casual conversation and touch is

a notable aspect in physiotherapy to build a therapeutic relationship (Hiller et al., 2015). For occupational therapy, partnership and patient autonomy were described as key components to being patient-centred (Law et al., 1995). Variations in the definition of patient-centred care may stem from differences in scope of practice between disciplines, but also variations in the perceived needs of participants (i.e. patients, clinicians).

To overcome the lack of a unified definition of patient-cared care, Scholl and colleagues (2014) performed a systematic review of 4707 articles across different healthcare disciplines. Content analysis identified 15 dimensions of patient-centredness across health disciplines that were categorised under enablers, principles and activities of patient-centred care (Table 2.1). This study formulated the first part of a larger study, which aimed to evaluate the dimensions of patient-centred care (Scholl et al., 2014).

Table 2. 1: Fifteen Dimensions of Patient-Centredness (Scholl et al, 2014)

Dimensions	Description examples
Principles	
Essential characteristics of the clinician	Clinician characteristics such as being self-reflective, respectful, empathic, honest, accountable, compassionate and committed to the patient.
Clinician-patient relationship	Building partnership, constancy, trust, mutual caring, guidance, rapport building, mutual understanding and responsibilities.
Patient as a unique person	Eliciting patient's individual needs, preferences, values, feelings, concerns and exploring the patient's disease and illness experience on his or her daily life.
Biopsychosocial perspective	Understanding the biological, psychological, and social context of the illness, as well as contextual factors.
Enablers	
Client-patient communication	Patient-centred communication and general communication skills, including verbal and nonverbal behaviour.
Integration of medical and non-medical care	Integrate medical and non-medical care; supporting complementary medicine, showing sensitivity to non-medical and spiritual dimensions.
Teamwork and teambuilding	Integration between departments, institutions and healthcare providers. Integrated training and education between interdisciplinary teams.
Access to care	Offering appropriate and preferred access to care that is accessible to the patient. This includes the provision of clear instructions.
Coordination and continuity of care	Coordinating support services and providing follow-up appointments.
Activities	
Patient information	Sharing knowledge and information between the clinician and the patient.
Patient involvement in care	Encouraging the patient to take part in the decision process regarding his or her health. Respecting patients' preferences and choice.
Involvement of family and friends	Providing information to family and friends to take part in the decision-making process. Recognising the need of caregivers.
Patient empowerment	Acknowledging patients' ability to self-manage his or her illness. Encouraging patients to take responsibility to improve his or her health condition.
Physical support	Ensuring physical comfort and assistance with activities and safe care.
Emotional Support	Responding to patients' emotions including anxiety over the health condition, treatment and impact to his or her daily life.

In the second part of the study, Zill and colleagues (2015) invited 297 experts internationally from different health professions and experiences to validate and prioritise the 15 dimensions. The top five dimensions of patient-centred care were: patient as a unique person, patient involvement, patient information, clinician-patient communication, and patient empowerment (Zill et al., 2015). While these dimensions shared similarities with existing definitions in the medical literature (Epstein & Street, 2007; Mead & Bower, 2000; Roter, 2000; Stewart, 1995), dimensions of biopsychosocial perspectives and clinicians' characteristics that are essential for audiological rehabilitation were not given precedence. Given the experts in the study were predominately of a medical or psychology background, the sample may be less representative of allied health professions such as audiology. However, the dimensions highlight the importance of the patient-centred care at the patient-clinician level and communication is the basis of enacting the patient-centred dimensions (e.g. providing patient information, encouraging patient involvement, and treating the patient as a unique person).

For the discipline of audiology, Grenness et al (2014) devised a profession-specific definition of patient-centred care in an audiological rehabilitation context. The study interviewed older adults who owned hearing aids on their perspectives of and preferences for patient-centred care. Within the overarching theme of providing individualised care, the categories of building a therapeutic relationship, the players (i.e. audiologists' and patients' characteristics) and clinical processes during audiological rehabilitation of information exchange and shared decision-making were valued (Grenness et al., 2014a). These components of patient-centred care are situated within the 15 dimensions from Scholl and colleague's (2014) findings and

again suggests that patient-audiologists communication formulates the foundations for patient-centred care.

2.3.2. What is Patient-Centred Communication?

It is well established in the medical literature that communication which incorporates the concept of patient-centred care (i.e. patient-centred communication) is associated with positive patient outcomes (Epstein, 2006; Hall et al., 1988; Jackson, 2005; Stewart, 1995; Zolnierek & DiMatteo, 2009). For instance, a number of studies have found patient-centred interactions to improve patient satisfaction (Michie et al., 2003; Stewart et al., 2000; Swenson et al., 2004), adherence with recommendations (Cherry, 2015; Street, Makoul, Arora, & Epstein, 2009; Zolnierek & DiMatteo, 2009), and better patient health outcomes (Stewart, 1995; Street et al., 2009; Zolnierek & DiMatteo, 2009). In the medical discipline, practitioners also benefit from communicating in a patient-centred manner through enhanced accuracy and efficiency of the clinical encounter, reduced patient complaints from miscommunications and greater overall job satisfaction (Silverman et al., 2013).

Similar to the definition of patient-centred care, challenges in obtaining a universal definition of patient-centred communication has been documented (de Haes & Bensing, 2009; Roter, 2000). Challenges include variations in study methodologies such as qualitative video or audio-recordings and quantitative coding of the patient-clinician interaction (Beck, Daughtridge, & Sloane, 2002); the lack of specificity in defining communication components (de Haes & Bensing, 2009); and the translation of the clinician's communication behaviour on patient outcomes (de Haes & Bensing, 2009; Roter, 2000; Street et al., 2009). To address the

aforementioned challenges, de Haes & Bensing (2009) proposed the six-function model of medical communication that is synthesised from earlier communication models that have positive associations with patient outcomes or 'endpoints'. The following section provides a detailed description of each function and Table 2.2 provides examples of the communication tasks within each function.

The first function of fostering the relationship is a fundamental component of patient-centred care across healthcare, including audiology. A good patient-clinician relationship can facilitate collaboration, establish common goals and treatment agreement (Martin, Garske, & Davis, 2000). For instance, a trusting relationship with the patient is associated with a greater likelihood of adhering to treatment (Pinto et al., 2012). Conversely, a poor patient-doctor relationship can negatively impact on the patient's emotional and physical wellbeing (Williams & Irurita, 2004). The outcome of building a therapeutic relationship is patient satisfaction and positive patient health outcomes, which is arguably the main goal in healthcare delivery (Beck, Daughtridge, & Sloane, 2002; Hall et al., 1988; Stewart, 1995).

Gathering and providing information is the second and third consecutive function in patient-centred communication (de Haes & Bensing, 2009). These two functions sits under information exchange from earlier models (de Haes & Teunissen, 2005; Epstein & Street, 2007; Ong, de Haes, Hoos, & Lammes, 1995). De Haes and Bensing (2009) argued a separation of the functions is warranted given the different roles the patient and doctor undertakes during these processes. For instance, during information gathering, the patient's role is to give and provide information regarding their illness. In turn, the doctor is the recipient of the information to formulate a diagnosis. These roles are reversed during information provision where the patient receives information to gain an understanding of their illness and management options. The

provision of information has been found to improve the patient's ability to recall information, and to promote a greater sense of partnership and patient satisfaction (Hall et al., 1988; Ong et al., 1995; Stewart, 1995).

The earlier functions of fostering the relationship, gathering and providing of information contribute to the fourth component of decision-making. The decision-making function is characterised by encouraging the patient to actively participate in the discussion of their illness and work towards an agreeable plan to promote treatment adherence (de Haes & Bensing, 2009; Ong et al., 1995). This enables the resolution of any potential concerns or barriers that may hinder treatment adherence (Roter, 2000). The significance of active participation is to enable patients to feel accountable for obtaining their health goal (Michie, Miles, & Weinman, 2003).

The fifth communication function is enabling patients to manage their illness autonomously. It is an expansion on the earlier functions of information gathering and provision regarding the illness to include potential psychosocial determinants. The holistic nature of communication is a key component in Mead and Bower's (2000) definition of patient-centred care. This is particularly relevant for patients with a chronic medical condition to ensure long-term treatment adherence is achieved.

The final function is responding to emotions to account for patients' emotional responses to illness. When doctors are responsive in validating these emotions, it can improve patients' physical and emotional wellbeing (Roter et al., 1995). In particular, the display of empathy and acknowledgment of the patient's emotional state can result in a reduction of psychological distress and increase patient satisfaction (Hall et al., 1988; Roter et al., 1995). On the contrary,

when the patient's emotional distress is overlooked, it can hinder relationship building and treatment outcomes (de Haes & Bensing, 2009).

Table 2. 2: Examples of communication tasks within the six-function model

Six-Function Model	Examples of communication tasks
Fostering the relationship	Positive behaviours such as laughter, humour, conveying interest, friendliness, and a non-judgmental attitude (Ong et al., 1995; Roter, 2000). Active listening enables patients to feel their concerns are heard and respected (Jagosh, Donald Boudreau, Steinert, MacDonald, & Ingram, 2011).
Gathering Information	Elicit patient narrative and perspectives into the problem (Bird & Cohen-Cole, 1990).
Providing Information	Provide information that resonates with the patient's main concern and establishes a foundation for decision-making on treatment options (Miller, Hope, & Talbot, 1999).
Decision-making	Formulated through active patient participation during the consultation and management process (Susan Michie et al., 2003).
Enablement	Communication about social or lifestyle factors that may be a barrier to treatment adherence (de Haes & Bensing, 2009).
Responding to emotions	Includes listening attentively to the patient's socio-emotional responses, using silence, non-verbal gestures and validating their emotional concerns (Hall et al., 1988; Jagosh, Donald Boudreau, Steinert, MacDonald, & Ingram, 2011; Ong et al., 1995; Stewart, 1995).

The interrelated and non-hierarchical nature of the six communication functions demonstrates a range of communication tasks during a clinical encounter (see Table 2.2). The descriptions provide an illustration of the prominence of communication functions during different phases of the clinical encounter. For instance, information gathering principally occur during the beginning of the appointment to elicit patients' concerns. Information provision and decision-making are likely to occur towards the end of the appointment to discuss treatment options. De Haes and Bensing (2009) advocates that having a shared communication framework will both benefit research into teaching clinical communication, as well as patient outcomes in different settings.

2.3.3. Patient-Centred Communication in Audiology

There is growing research in the context of adult audiological rehabilitation that has advocated for the components of patient-centred communication (Ekberg, Barr, & Hickson, 2017; Grenness et al., 2014a). A key study in this area comes from an operationalised model for clinicians that was developed from older adults' perspectives of patient-centred care in an audiological rehabilitation context (Grenness et al., 2014a). The model contains four patient-centred communication functions that are supported by other studies. The first was to build a 'therapeutic relationship' with the patient, which was described as central to the audiological rehabilitation program (Grenness et al., 2014a). This was characterised by the audiologist's ability to establish a trusting relationship, particularly due to the discussions surrounding financial decisions and problem solving of hearing aids (Ekberg, Barr, & Hickson, 2017; Grenness et al., 2014a). This includes communicative tasks such as making the patient feel understood and avoiding undue pressure to obtain hearing devices (Grenness et al., 2014; Poost-Foroosh, Jennings, Shaw, Meston, & Cheesman, 2011; Poost-Foroosh, Jennings, & Cheesman, 2015). The second and third communication components consisted of 'inform' and 'involve', which was analogous to information provision and decision-making in de Haes and Bensing's (2009) six-function model. These communication functions serve to promote mutual understanding (Grenness et al., 2014; Poost-Foroosh et al., 2011; Poost-Foroosh et al., 2015) and encourage active patient participation in the selection of hearing devices or an agreed rehabilitation program (Grenness et al., 2014a; Laplante-Lévesque et al., 2010a; Preminger, Oxenbøll, Barnett, Jensen, & Laplante-Lévesque, 2015). The last function of 'individualised'

care denotes the audiologist's ability to demonstrate flexibility in meeting the patient's preferences (Grenness et al., 2014a).

In addition to the operationalised communication function, other studies have advocated the acknowledgment of patients' emotional response as an important function as clinicians' empathetic responses can help patients feel their concerns are validated (Ekberg et al., 2014; Poost-Foroosh et al., 2011). The use of complex language or jargon has also been found to hinder patient participation and willingness to obtain hearing aids (Nair & Cienkowski, 2010; Sciacca, Meyer, Ekberg, Barr, & Hickson, 2017). Finally, age-related hearing impairment is a chronic health condition where patients must endure long-term adaptations to "adjust to the loss of hearing, make [behavioural] adaptations, and develop the skills to cope with the communication and adjustment issues they experience" (Montano & Spitzer, 2009, p.171). Therefore, the communication function of enablement is essential in facilitating self-management and autonomy to improve quality of life (Montano & Spitzer, 2009).

2.3.4. Counselling and Patient-Centred Communication

Commonalities exist between counselling and patient-centred communication. In this context, 'counselling' is defined as non-professional counselling where clinicians provide support for patient concerns arising from the hearing impairment. This is in contrast to professional counsellors, such as psychologists or psychiatrists who have had formal training to manage patients with mental issues or have experienced abuse. Counselling has long been advocated in audiology, particularly in audiology literature from the US (English, Mendel, Rojeski, & Hornak, 1999; Erdman, Wark, & Montano, 1994; Montano & Spitzer, 2009). Sweetow (1999)

defined counselling as gathering information by listening to the client attentively and adjusting one's behaviour based on the patient's response. Culpepper, Mendel, & McCarthy (1994) included educating the patient or family, providing affective support and facilitating behavioural change. From an audiological rehabilitation context, counselling involves eliciting the biopsychosocial perspective, display of empathy, encourage patient participation and promote patient self-management of their hearing impairment (Montano & Spitzer, 2009). This description corresponds to information exchange, responding to patients' emotions, decision-making and enablement within patient-centred communication framework.

The most commonly used definitions of counselling in audiology are informational counselling and personal adjustment counselling. Informational counselling is often described as the provision of content information, such as diagnostic results and management options (American Academy of Audiology, 2004; English, Mendel, Rojeski, & Hornak, 1999; ASHA, 2004). One can argue that this form of counselling predominately sits within the information exchange function of patient-centred communication. In contrast, personal adjustment counselling, involves addressing the psychosocial impact of hearing loss including emotional concerns (American Academy of Audiology, 2004; Cherry, 2015; English et al., 1999; ASHA, 2004), which are hallmarks of building a therapeutic relationship and responding effectively to patients' emotional concerns. Collectively, these definitions of counselling fall under the patient-centred communication framework.

2.4. Current Practice and Factors Influencing Patient-Centred Communication

To address the poor hearing aid uptake and rehabilitation outcomes (see section 2.2.4.), the discipline of audiology is undergoing a paradigm shift towards a patient-centred approach to hearing care (Hickson, 2012; Singh et al., 2016). Hickson (2012) detailed four key changes within audiological rehabilitation to include: a focus beyond amplification devices, the emergence of audiology literature on patient-centred interactions, changes in audiology education, and engagement of hearing professionals to foster a holistic perspective to hearing impairment. Audiology professional bodies have also unanimously acknowledged patient-centred communication as an important skillset for audiologists (ASHA, 2018; AudA 2013; BSA, 2016). With the emerging evidence and recognition towards patient-centred interactions, this section will discuss audiologists' preference towards patient-centred interactions and current practices, as well as factors influencing patient-centred communication.

2.4.1. Preferences for Patient-Centred Care in Audiology

Clinicians' preferences for and beliefs about patient-centred care has been explored across many healthcare professions (Beattie, Durham, Harvey, Steele, & McHanwell, 2012; Chan & Ahmad, 2011; Dockens, Bellon-harn, & Manchaiah, 2016a; Haidet et al., 2002; Tsimtsiou et al., 2007). One way to quantify clinicians' preferences regarding patient-centred care is to have clinicians complete the Patient-Practitioner Oriented Scale (PPOS) (Krupat et al., 2000). The PPOS measures key facets of patient-centred care across two subscales. The sub-scales include the category of sharing, where power-relations, information and decisions surrounding treatment recommendations are shared with the patient. The second category of caring

measures the emotional and holistic aspects of patient care (Krupat et al., 2000; Shaw, Woiszwillo, & Krupat, 2012).

The PPOS has been adapted to the context of audiology to investigate clinicians' and students' preferred patient interaction. In an Australian survey of 663 audiologists, the mean PPOS scores showed audiologists' high preference for patient-centred interactions (Laplante-Lévesque et al., 2014). Whilst gender, place of residence and employment had no significant bearing on patient-centred preferences, the increase in age and years in practice showed a positive association (Laplante-Lévesque et al., 2014). Audiologists who provided teaching, community education and industrial audiology services also exhibited a higher preference than audiologists working in the private sector (Laplante-Lévesque et al., 2014). The PPOS questionnaire has also been used in a cross-cultural study of 191 audiologists from Portugal, India, and Iran (Manchaiah, Gomersall, Tome, Ahmadi, & Krishna, 2014). While the findings showed high preferences for patient-centred care in all three countries, a significant variation in the level of preference was found between the countries. This suggests differences in cultural norms may influence clinician's attitude. In a recent study investigating the attitudes and practices of audiologists in Malaysia, a mixed-methods approach using the PPOS and semi-structured interviews were conducted to explore audiologists' perspectives in a clinical environment (Ali, Meyer, & Hickson, 2018). Consistent with findings from other countries (Laplante-Lévesque et al., 2014; Manchaiah et al., 2014), audiologists in Malaysia also showed a strong preference towards patient-centred management. However, a biomedically focused interaction was a key theme from the in-depth interviews (Ali et al., 2018). This finding demonstrates that a positive attitude towards patient-centred care may not equate to a preferred clinical practice.

In addition to clinicians' perspectives, the PPOS questionnaire has been used in undergraduate speech and hearing science students (Dockens et al., 2016a). Consistent with findings from the medical literature (Archer & van Heerden, 2017; Bombeke et al., 2010; Haidet et al., 2002), students generally displayed a higher preference for patient-centredness during the early stages of the program. This cross-sectional study also found the caring subscale to be significantly lower indicating a need to emphasise caring components such as empathy into the curriculum (Dockens et al., 2016a). However, considerations must be drawn regarding the differing educational context and student cohort. For instance, it was unclear to what degree communication skills teaching was provided at each exposure level in the curriculum content, hence, it was difficult to infer the influence of teaching content on students' patient-centred preferences. Moreover, there were no inferential statistics to determine whether students' intrinsic characteristics or educational background contributed to the preservation of patient-centred preferences.

It would also be valuable to assess final year audiology students' attitudes towards patient-centred care before graduation to predict future intentions of clinicians and to gauge the adequacy of the existing audiology curriculum in instilling patient-centred values. This is because medical students' attitudes towards patient-centredness have been found to alter during the course of the program (Archer & van Heerden, 2017; Bombeke et al., 2010; Griffith & Wilson, 2001; Haidet et al., 2002). In a survey study, the PPOS questionnaire was administered to 673 first, third and fourth-year medical students (Haidet et al., 2002). The findings showed students' patient-centred attitudes decrease in later years (Haidet et al., 2002). A number of factors have been speculated to impede students' values towards patient-centredness such as the transient nature of the patient interaction, students' well-being,

avoidance of intimacy during training and time constraints (Spencer, 2004). Regardless of the actual cause, there is a trend for the degree of patient-centredness to reduce as medical students gain more clinical experience and knowledge (Archer & van Heerden, 2017; Bombeke et al., 2010; Haidet et al., 2002).

Although the PPOS has been widely used and validated (Krupat et al., 2000; Shaw et al., 2012), it is dependent on the participant's self-report of their clinical practice. As mentioned in the mixed-methods findings by Ali and colleagues (2018), there is evidence to suggest that participants' self-reported preferences may not translate into clinical practice. Therefore, observations of audiologists' clinical encounters offer a valuable and objective insight into actual practices.

2.4.2. Patient-Audiologist Interactions and Patient-Centred Communication

Until recently, relatively little was known about patient-audiologist interactions and whether patient-centred communication is enacted (Doyle, 1994). While it was evident from section 2.4.1. that audiologists showed a preference for patient-centredness (Laplante-Lévesque et al., 2014; Manchaiah et al., 2014), recent studies have highlighted discrepancies between preferences for, and actual clinical communication (Ekberg et al., 2014; Grenness et al., 2015a, 2015b; Meyer, Barr, Khan, & Hickson, 2017).

Observational studies have provided real-world insight into the communication and process that occur in adult audiology encounters and how these align with patient-centred communication principles. Grenness and colleagues explored older adult patient and audiologist interactions in an Australian hearing rehabilitation setting (Grenness et al., 2015a,

2015b). Sixty-three appointments were video-recorded and analysed using the Roter Interaction Analysis System (RIAS) to code patient-centred communication elements (Roter & Larson, 2002).

During the history-taking phase of the appointment, clinicians had a tendency to display more biomedical utterances and verbal dominance towards the patient (Grenness et al., 2015a). These type of utterances are classed as clinician-centred where communication is more structured and specific, with closed questions directed towards the illness (Roter, Stewart, Putnam, Stiles, & Inui, 1997). Interestingly, in a recent study where patient-audiologist communication was profiled into biomedical, psychosocial and consumerist categories (Meyer et al., 2017), the findings showed that three quarters of the history-taking appointments consisted of biopsychosocial interactions (Meyer et al., 2017). However, the authors cautioned that this may be driven by patients' high degree of psychosocial exchange (Meyer et al., 2017).

In the diagnosis and management phase, clinician's verbal dominance was again demonstrated where technical audiometric results were prioritised and emphasis on psychosocial factors were limited (Grenness et al., 2015b; Meyer et al., 2017). Hearing aids were recommended in a majority of cases when a hearing impairment was detected, with minimal shared decision-making in obtaining hearing aids (Grenness et al., 2015b; Meyer et al., 2017). Where patients expressed psychosocial concerns regarding hearing aid recommendations, clinicians were found to offer little acknowledgment or empathic responses (Ekberg et al., 2014; Meyer et al., 2017). Consequently, patients restated their concerns in an attempt to feel understood (Ekberg et al., 2014). The lack of emotional engagement created missed opportunities for relationship building (Grenness et al., 2015a). Conversely, in cases where patients' psychosocial concerns were addressed, adherence to recommendations increased (Ekberg et

al., 2014). These findings are consistent with previous studies in which a *communication mismatch* occurs where the patient's emotional response to the hearing impairment is disregarded and technical information is provided instead (English, Rojeski, & Branham, 2000; English et al., 1999). As a result, patients can feel invalidated resulting in poor patient satisfaction and non-adherence to recommendation (Sweetow, 1999).

Collectively, the findings show that patient-centred communication is seldom displayed during initial audiological consultations with an adult patient. This emphasises a need to further explore factors contributing to the evidence-practice gap of person-centred communication in audiology. One of the factors may stem from the macro-influences of the scope of practice in audiology.

2.4.3. Professional Bodies

As detailed in section 2.2.3., the profession of audiology has traditionally centred on the site-of-lesion perspective to identify the hearing impairment and evaluate hearing devices (Katz, 2009; Pichora-Fuller & Singh, 2006; Ross, 2007; Singh et al., 2016). With the growing evidence emphasising the role of patient-audiologist interactions, a number of Audiology professional bodies have incorporated patient-centred communication in the scope of practice (ASHA, 2018; AudA, 2013; BSA, 2016).

In Australia, three professional bodies collaborated to develop a joint scope of practice to encourage best practice and consistency within the audiology profession (AudA, ACAuD & HAASA, 2016). The Scope of Practice for Audiologists and Audiometrists (AudA, ACAuD & HAASA, 2016) is centred on clinicians' skills and knowledge, and has a heavy emphasis on

assessment tasks and management pathways. However, under hearing rehabilitation, patient-centred communication nuances were more evident such as: to 'establish a therapeutic relationship with the adult patient and their significant other' (p.55), involve the patient to plan the rehabilitation program and provide counselling related to psychosocial aspects (AudA, ACAuD and HAASA, 2016).

The emphasis on patient-centred care is also evident in the British Society of Audiology (BSA) for adult rehabilitation (BSA, 2016). Unlike the Australian guidelines, the guiding principles of patient-centred care are detailed throughout the practice guide to include: identifying individual needs, setting joint goals, making shared, informed decisions, and supporting self-management strategies (BSA, 2016, p.7). Emphasis is placed on the clinician being a 'facilitator' rather than a 'fixer' to balance the power relations in the patient-clinician interaction.

Following a similar stance, the American Speech-Language-Hearing Association (ASHA, 2018) has recently published an updated report on the scope of practice that specifically includes patient-centred care. The description outlines the importance of a holistic approach to care and working with the patient, family and other professionals in a collaborative manner. This description is relevant across all areas of audiological care. The element of non-professional counselling has carried forward from previous guidelines to include informational counselling of diagnostic results and personal adjustment counselling on psychosocial impact (ASHA, 2004; ASHA, 2004).

In summary, while there is still a dominant emphasis on the site-of-lesion approach, there is a shift towards incorporating patient-centred approaches into audiological practices, particularly in the area of hearing rehabilitation. As the introduction of patient-centred approaches is relatively new in the audiology profession, education and training will be required to upskill to

promote change in clinical practice. This is important given that counselling and patient-centred care are sometimes used as container concepts without detailed specification of how it can translate in clinical practice. Therefore, to equip audiologists with the appropriate skillset, further considerations are needed to ascertain how these skills can be acquired and maintained.

2.4.4. Areas in Need of Further Guidance

The quality of the patient-audiologist interaction and enactment of patient-centred communication are influenced by the clinician's interpersonal skills (Laplante-Lévesque, Knudsen, et al., 2012; Laplante-Lévesque et al., 2010a) as well as other factors such as the organisation. As with other healthcare professions, audiologists are required to uphold priorities set by the clinic, such as meeting protocol standards, and adhering with the organisational culture (Newton et al, 2009). In Australia, the growing commercialisation of hearing clinics has raised concerns about audiologists deviating from patient-centred interactions. A recent report by the Australian Competition and Consumer Commission (ACCC) highlighted that some clinicians are pressured to meet sales targets imposed by their employer to avoid poor performance review and potential employment termination (ACCC, 2017). Although there is little research investigating the influence of the organisational environment in an Australian context, there are findings based on the US experience. In a qualitative study, forty senior organisation staff and patient committee representatives were interviewed on factors that can promote or hinder the provision of patient-centred care (Luxford, Safran, & Delbanco, 2011). Content analysis showed nine of the eleven factors were facilitators in

promoting patient-centredness. Some of the factors include a strong senior leadership, active engagement of patient and family, staff capacity building, accountability and incentives, and a culture that is supportive of change and learning (Luxford et al., 2011). The findings shed light into areas within the organisation that can encourage the enactment of patient-centred care. Further research is needed to investigate the impact of organisational influences on patients' rehabilitation outcomes.

Aside from external factors, the enactment of patient-centred communication ultimately comes down to the audiologists' skills. Throughout this chapter, evidence-based findings have highlighted the role of the audiologist and their communication skills to influence audiological rehabilitation outcomes (see Sections 2.3.3. and 2.2.4.). Despite the growing evidence to foster patient-audiologist interactions, existing research report audiologists to feel uncomfortable when communicating with patients and family about the hearing impairment (Herzfeld & English, 2001; Martin, Barr, & Bernstein, 1992). In a recent review on counselling patients with using hearing technologies, Meibos and colleagues (2017) reported audiologists were comfortable with informational counselling but generally felt unprepared to provide personal adjustment counselling. This was across paediatric (Meibos et al., 2016) and adult audiological cases (Makhoba & Joseph, 2016). These findings further suggest that despite audiologists' preference towards patient-centred care (e.g. Ali et al., 2018; Laplante-Lévesque et al., 2014; Manchaiah et al., 2014), they may lack the communication skills to translate their preference into practice. In turn, this may stem from factors relating to training and education in patient-centred communication.

Academic preparation is one of the driving forces behind shaping how future healthcare professionals engage in clinical communication with patients (Bombeke et al., 2012; Brown &

Bylund, 2008; Parry & Brown, 2009b; Pew-Fetzer Task Force, Tresolini, & Pew-Fetzer Task, 1994; Smith, Hanson, Tewksbury, Christy, Talib, Harris, Beck, Wolf, et al., 2007). Educational institutions have a responsibility to ensure audiology students are well equipped with knowledge, technical and communication skills to deliver quality hearing care (Pascoe & Singh, 2008). Fostering students' communication skills will build confidence in clinical practice and improve quality of audiological care, as well as employability at the conclusion of the program (Bennett & Lyons, 2011; Hollandsworth, Kazelskis, Stevens, & Dressel, 1979). As stated in section 2.2.3., the audiology profession has historically been technically-focused where patient communication is treated as a skill that is self-acquired during clinical practice. Evidence-based research into patient-centred care in audiology has only emerged in the past 5 years and further research is needed to justify and successfully implement this into the audiology curriculum. There is extensive research into clinical communication training in the medical literature (Silverman et al., 2013; Spencer & Silverman, 2001), yet little is known about how clinical communication is taught and learned in the audiology discipline. Therefore, in the subsequent sections, clinical communication skills education in audiology will be discussed.

2.5. Communication Skills Training in Medical Education

While there is a sparsity of research into clinical communication training in audiology, a vast amount of research exists in other health professions, such as medicine, that the audiological discipline can draw upon. The medical literature has long recognised that communication is a skill which can be taught and cultivated (Aspegren, 1999; Kurtz, 2002; Silverman, Kurtz, & Draper, 2013). Research indicates that when doctors receive training in patient-centred communication, they are better at identifying patients' emotional cues and handling emotional

distress in comparison with those without training (Lewin, Skea, Entwistel, Zwarentein, & Dick, 2001). In addition, a meta-analysis of 106 studies found patient adherence occurred 12% less in doctors without communication skills training (Zolnierek & DiMatteo, 2009). In recognition of the benefits of communication skills training, medical accreditation bodies across the world have included communication as a required competency (e.g. Accreditation Council for Graduate Medical Education, 2017; Australian Medical Council, 2016; Institute for International Medical Education, 2002). In turn, current medical curricula have implemented communication training as a core competency, alongside knowledge base, physical examination and problem-solving abilities (Australian Medical Council, 2016; Makoul, 2001a; Silverman et al., 2013).

2.5.1. How is Communication Skills Training Informed?

To guide clinical communication teaching, a number of consensus statements on patient-doctor communication have been developed worldwide to inform the medical curriculum (Kiessling et al., 2010; Makoul, 2001a; Simpson et al., 1991; von Fragstein et al., 2008). The consensus statements are devised by medical educators, representatives from accreditation bodies, and communication experts to identify evidence-based elements to elicit effective clinical communication (Kiessling et al., 2010; Makoul, 2001a; Simpson et al., 1991; von Fragstein et al., 2008). More recently, a European consensus statement has also been developed for non-medical healthcare professions (Bachmann et al., 2013). A summary of the consensus statements is provided in Table 2.1.

Table 2. 3: Summary of consensus statements for patient-clinician communication

Name & Authors	Country	Summary
Basel Consensus Statement (Kiessling et al, 2010)	German-speaking countries	Thirty-four experts from educational, medical and psychological professions developed communication and social competencies. The competencies for the main categories within a doctor-patient relationship are as follows: i) communication in the doctor-patient relationship ii) shaping the relationship iii) subjective realities and iv) theoretical models.
Health Professions Core Communication Curriculum (Bachmann et al, 2013)	Sixteen European countries	Communication experts from 15 healthcare professions developed the following core communication objectives for patient-clinician interaction: i) shaping the relationship ii) patient's perspectives and health beliefs iii) information iv) reasoning and decision-making and v) uncertainty.
Kalamazoo Consensus Statement (Makoul, 2001)	USA	Communication framework developed by experts in medical education and professional bodies at the Bayer-Fetzer Conference on physician-patient communication in medical education. The key communication elements are: i) build a relationship ii) open the discussion iii) gather information iv) understand that patient's perspective v) share information vi) reach agreement on problems and plans and vii) provide closure.
Toronto Consensus Statement (Simpson et al, 1991)	Canada	Clinical communication skills recommended are: Data gathering, imparting information, therapeutic skills to maintain relationships, adopting a biopsychosocial perspective and having self-awareness
UK consensus statement on the content of communication curricula	UK	Developed by leaders from 33 medical schools to help with curriculum design. The 'curriculum wheel' contains different domains of clinical communication where the domain of clinical communication tasks is: i) relationship building ii) initiation iii) information gathering and history taking iv) explanation and planning v) closure vi) structuring

In addition to consensus statements, communication training frameworks in medical education have also emerged to provide structure to both teachers and learners alike. Some examples include the three function model of the medical interview, (Bird & Cohen-Cole,

1990), Smith's Patient-Centred Interviewing (Fortin, Dwamena, Frankel, & Smith, 2012) and the highly cited Calgary-Cambridge referenced observation guides (Kurtz & Silverman, 1996), which have since been revised and adopted into other healthcare contexts (Greenhill et al., 2011; Ida Institute, 2018; Nielsen, Tørring, & Hansen, 2014).

2.5.2. Communication Skills Training in Medical Education

Communication skills training has generally been found to improve students' communication skills (Aspegren, 1999). In a randomised study to assess the effects of communication skills training, Yedidia and colleagues (2003) compared students from three medical schools who received specialised communication curricula and those without training. Assessments were conducted at the beginning and end of the third-year program. Findings showed students who received the communication training significantly outperformed the control group in relationship building, organisation and time management, patient assessment and shared decision-making (Yedidia et al., 2003). These findings are supported by a meta-analysis of 24 randomised controlled trials on the effects of communication skills training on medical students' communication (Smith, Hanson, Tewksbury, Christy, Talib, Harris, Beck, & Wolf, 2007). Smith and colleagues (2007) found that structured feedback on student-patient interviews was the most effective teaching method in improving students' information gathering skills and patient rapport (Smith, Hanson, Tewksbury, Christy, Talib, Harris, Beck, & Wolf, 2007). Small group discussions also had a positive effect on students' communication performance (Smith, Hanson, Tewksbury, Christy, Talib, Harris, Beck, & Wolf, 2007). In addition to providing constructive feedback and teaching in small groups, Levinson and colleagues

added the need for 'deliberate practice' (Levinson, Lesser, & Epstein, 2010; p.1311). The authors also advocated for communication skills to be taught systematically and the need for further training after students have completed medical school (Levinson et al., 2010).

2.5.3. Communication Skills versus Skilled Communication

Although communication is generally accepted as a skill that can be segregated into elements for teaching and assessment (Makoul, 2001a; Simpson et al., 1991; von Fragstein et al., 2008), another school of thought portrays communication to be individual and intuitive (Salmon & Young, 2011). Criticisms exist in describing communication skills training as a reductive approach that does not grasp the complex humanities discipline (Salmon & Young, 2011; Skelton, 2008). Salmon and Young (2011) argued that communication skills are often described as behavioural actions such as not interrupting the patient to achieve the communication goal of understanding the patient's perspectives (Rider & Keefer, 2006). The issues however, in communication aspects such as building a therapeutic relationship, are complex and dynamic in nature and difficult to quantify into pre-defined skills (Salmon & Young, 2011). The subjective and fluid nature of communication does not always follow a guided structure and the same piece of communication can be interpreted differently by patients or under different contexts (Hatem, Mazor, Fischer, Philbin, & Quirk, 2018; Salmon & Young, 2011). This is particularly relevant for complex scenarios in delivering bad news where practitioners have been found to deviate from formal guidance (Eggly et al., 2006).

It is acknowledged that communication undergoes a developmental process where novices acquire communication skills in order to become skilled communicators (Salmon & Young,

2011; van der Vleuten, 2018). Literature in medical education has advocated communication training to be longitudinally integrated into the medical curriculum (Deveugele et al., 2005; van Dalen et al., 2002; van Weel-Baumgarten, Bolhuis, Rosenbaum, & Silverman, 2013). That is, communication training should start from the beginning of the program and be continually reinforced throughout the program until the end to develop and sustain students' communication skills (van Dalen et al., 2002; van Weel-Baumgarten et al., 2013). This will ensure students are provided with renewed communication training throughout the program and students needing remediation are detected early (Deveugele et al., 2005). Moreover, it has been argued that the curriculum design should integrate communication skills teaching from a peripheral to a central component in medical education (Silverman, 2009). This is because communication skills teaching has traditionally been less prioritised than medical knowledge.

The use of teaching frameworks that are centred on achieving communication goals rather than checking off communication tasks will give students the flexibility to develop their own communication style (Makoul, 2001b). Classroom based learning such as role-plays and simulated patients should be congruent to actual clinical scenarios to increase transferability (Bosse et al., 2010; Debra Nestel & Tierney, 2007; van Dalen et al., 2002). Furthermore, during clinical placements, learning through communities of practice and receiving feedback from clinical educators can facilitate students' learning (Bensing, van Dulmen, & Tates, 2003; Clynes & Raftery, 2008; Hattie & Timperley, 2007; van Dalen et al., 2002; Wenger, 2000).

Although the majority of studies included in this section are based in the medical education literature, clinical communication skills are also emphasised in other healthcare professions (Bosse et al., 2010; Denniston, Molloy, Nestel, Woodward-Kron, & Keating, 2017; Hiller et al.,

2015; Silverman, 2016; Tørring, Nielsen, & Hansen, 2014). The next section will discuss communication training in the audiology context.

2.6. Communication Skills Training in Audiology

In contrast to medical education, the literature on clinical communication training in audiology is comparatively sparse. With a professional culture that primarily focuses on diagnostic auditory assessments (Katz, 2015; Montano & Spitzer, 2009), audiology communication training is primarily centred on content delivery such as avoiding technical jargon when delivering diagnostic results (English et al., 1999). Additionally, to accommodate for patients with a hearing impairment, guidelines have predominately focused on vocal and visual communication such as voice volume and maximising lip-reading cues (Barnett, 2002). Over the past two decades, there has been an increase in counselling training in the audiology programs. This section will first provide a background on the growth of counselling training in audiology, followed by the emerging research of counselling training on performance, teaching methods for communication training and students' perspectives of counselling.

2.6.1. Growth of Counselling Training in Audiology Programs

The expansion of the audiology scope of practice has sparked pressure on audiology programs to incorporate counselling training into the curriculum (Poole & Solomon, 2010). As discussed in section 2.3.4., counselling skills are embedded within the patient-centred communication framework. The emphasis on counselling education has been reflected in the US where the

transition from Masters to Doctorate of Audiology degree (AuD) was aimed at broadening students' clinical competencies and experiences to practice independently (Dinsmore, Bohnert, & Preminger, 2013). Early studies in audiology counselling education are predominately derived from the Master's degree in the US. Culpepper and colleagues (1994) conducted a survey on the provision of counselling programs in accredited communication science, including audiology and speech pathology. Although 94% of the graduate programs offered counselling training, only 22% of programs were compulsory (Culpepper, Mendel, & McCarthy, 1994). These results were similar to findings by Crandell (1997), who reported that only 27% of graduate audiology courses offered counselling training as a requirement. Graduate directors in the study pointed out the barriers to incorporating counselling courses included lack of funding, shortages of educators, and time constraints with the curriculum (Crandell, 1997). Such barriers are also resonated in the medical education literature (e.g. Deveugele et al., 2005).

With the introduction of the AuD programs in the last decade, emphasis on counselling patients' psychosocial and emotional concerns have gained recognition (Crandell, 1997; English & Zoladkiewicz, 2005; Sweetow, 1999). English & Weist (2005) investigated the inclusion of counselling training in AuD programs across 56 accredited universities in the US. The results showed that 85% of the programs have incorporated counselling into the course. When course instructors were asked to provide the main learning objectives, thematic analysis revealed psycho-emotional effects of hearing loss, counselling theories, counselling skills, and the role of the audiologist in counselling were the key themes (English & Weist, 2005). This finding is comparable with a recent syllabi review that showed approximately 76% of current

audiology programs have a compulsory counselling course in the curriculum (Whicker, Muñoz, Butcher, Schultz, & Twohig, 2017).

The growth of training programs has sparked the need to define counselling practices in audiology. In a recent PhD dissertation, an electronic Delphi review was conducted to identify the knowledge, skills and attitudes required for audiology counselling (Meibos, 2018). A panel of 33 clinicians, researchers, and educators who were identified as experts in audiology counselling generated a consensus of 64 counselling competency items (Meibos, 2018). More than half of the competency items were related the clinician's skills such as to listen to the patient empathetically, establish a therapeutic relationship and being able to manage difficult conversations (Meibos, 2018). The competency items provided a valuable foundation to formulate communication teaching tools for implementation into the audiology program. Further research can incorporate key aspects of patient-centred communication and include a wider scope of stakeholders in the educational sector.

2.6.2. Counselling Training on Performance

Research into communication training has predominately focused on counselling training as opposed to patient-centred communication. Early studies have explored the impact of counselling training on audiology student performances. For instance, English and colleagues (1999) investigated third year AuD students' ability to recognise patients' psychosocial concerns before and after completing the counselling component of the course. Although students were found to prioritise technical information prior to the training, students were better able to distinguish patients' need for content or emotional affirmation post-training

(English et al., 1999). Similar improvements have also been found using patient narratives. Berg and colleagues (2008) investigated audiology students' emotive responses after exposure to hearing loss narratives in written form and class discussions. Consistent with findings from medical education (Charon, 2001), audiology students were more likely to correctly incorporate emotive elements in their responses compared with the control group. These findings demonstrate students' ability to recognise patients' emotional response with training.

More recently, two studies on one-day counselling training seminars revealed mixed results in communication practices post-training (Muñoz, Nelson, Blaiser, Price, & Twohig, 2015; Muñoz, Ong, Borrie, Nelson, & Twohig, 2017). The first study recruited inter-professionals who work with children with a hearing impairment (audiologist, speech pathologists and deaf educators) and graduate audiology students. The training seminar comprised of group discussions, case examples, and provision of communication strategies. Pre- and post-questionnaire responses revealed no significant changes to communication practices one month after the training. In the second study, a one-day workshop was given to ten audiologists and students with the focus on hearing rehabilitation management (Muñoz et al., 2017b). The interactive workshop comprised of psychosocial counselling techniques, discussions and role-plays. Questionnaires and observer-rated scores of participants' counselling skills were taken over a 6-month period and follow-up was provided post-training. Findings showed audiologists noticed subjective improvements in their counselling behaviour, which was supported by a significant decrease in percentage speaking time indicative of a reduction in verbal dominance. However, the observer-rated scores revealed no significant change over time (Muñoz et al., 2017b).

The lack in observational improvement raises questions on the adequacy of the teaching methods. The authors suggested the lack of improvement was partly due to participants

spending the majority of time on assessment and education, and less on the decision-making of treatment goals or patients' psychological concerns (Muñoz et al., 2017b). Another explanation may stem from the complexity in training counselling skill and that more opportunities for practice were needed. This was consistent with the literature in medical education where communication training requires longitudinal integration into the curriculum (van Dalen et al., 2002; van Weel-Baumgarten et al., 2013). Therefore, a one-day workshop may not be sufficient to train and reinforce complex psychosocial counselling skills to sustain behaviour change. A strength of the study was the learning support provided by the psychologist following the workshop. However, little detail was provided on the type of feedback given to the participants as it can play a significant role to improve counselling skills (Branch & Paranjape, 2002; Clynes & Raftery, 2008). Opportunities for further studies may include exploring the factors influencing the implementation of patient-centred communication teaching in audiology programs.

2.6.3. Teaching Methods for Communication Training

In the past two decades, the use of experiential teaching methods for communication training has been documented (Dinsmore et al., 2013; Naeve-Velguth, Christensen, & Woods, 2013). In medical education, experiential teaching using standardised patients and learning in a naturalistic environment have been accepted as an effective tool for communication training (Ainsworth et al., 1991; Barrows, 1993; Eagles, Calder, Wilson, Murdoch, & Sclare, 2007; Ranmuthugala et al., 2011; Wenger, 2000). Standardised patients have been used in healthcare professions where technical and communication competencies are required

(Monaghan et al., 1997). This teaching method offers a sense of realism to develop students' ability to enact communication skills in a safe and controlled environment (Ainsworth et al., 1991; Barrows, 1993; Eagles et al., 2007; Naeve-Velguth et al., 2013). Standardised patients refer to both simulated or actual patients who have been trained to present a series of symptoms in a uniformed manner (Barrows, 1993).

At the Central Michigan University, simulated patients have been used since 2007 as part of the counselling unit of the audiology program (Naeve-Velguth et al., 2013). However, as opposed to hiring professional actors, simulated patients are played by a faculty member or university student to moderate the financial resources (Naeve-Velguth et al., 2013). The benefits of experiential learning have been further advocated by Dinsmore and colleagues (2013), who proposed a framework for standardised patients to be used across AuD programs. The authors described opportunities to assess students' clinical and communication competence that is standardised across universities. Learning opportunities to aid clinical skills training can also be maximised by feedback from both supervisors' or patients' perspectives (Dinsmore et al., 2013). This can assist in the facilitation of improving the standards of students' clinical and communication skills.

In addition to classroom-based teaching, clinical placements form an imperative part of most healthcare professions, including the discipline of audiology. Clinical placements give students an opportunity to learn through observations and direct interaction with patients. This not only builds a range of clinical competencies but also students' self-confidence (Rodger et al., 2008). The role of the clinical educator can support students' learning through feedback and role-modelling of professional behaviour (Kenny, Mann, & MacLeod, 2003; Laitinen-Väänänen, Talvitie, & Luukka, 2007; Walton & Barraclough, 2013). However, a number of factors can

hinder students' learning in a clinical context. For instance, the quality of clinics and educators, the added time and undue costs to supervise students, and consideration of patient care depending on students' competency level (Wilson et al., 2010). Although the described barriers and facilitators encompass all clinical competencies, there are direct implications on communication skills education. For instance, a lack of patient interaction and feedback about students' communication will hinder learning opportunities for improvement.

The use of performance feedback has recently been advocated for counselling training (Finai et al., 2018; Muñoz, 2018; Whicker, Muñoz, & Schultz, 2018). In a study by Finai and colleagues (2018), clinical appointments were recorded from five audiology graduate students who received counselling training. Performance feedback was provided individually in-between recording sessions. Feedback consisted of conversations surrounding students' clinical performance and identifying counselling skills that were achieved or missed in the recorded session. Findings showed directing attention towards patient interactions can increase students' time spent counselling (Finai et al., 2018). While a number of limitations were detailed by the authors such as small sample size, feedback timing, and prior counselling skills, the role of student feedback is supported by healthcare education literature to aid students' communication learning (Branch & Paranjape, 2002; Butler & Winne, 1995; Clynes & Raftery, 2008; Crenshaw, 2012; Finai et al., 2018).

2.6.4. Students' Perspectives of Counselling Learning

The effectiveness of communication training is in part, dependent on the learner's motivation to acquire those skills. Student's perspectives can therefore offer an insight into their attitudes towards the training program. In the US, distance-learning in the form of online courses have been offered in some universities to increase accessibility for students and mid-career audiologists seeking to complete the AuD program (English et al., 2000). In a sample of 17 AuD students enrolled in the distance-learning AuD program, a pre- and post-counselling course survey was emailed to evaluate the value of the counselling component (Herzfeld & English, 2001). Students showed greater value towards facilitating shared decision-making, using empathic listening and adopting a holistic view towards patient care (Herzfeld & English, 2001). Similar findings were shown in a larger survey of 183 AuD students where students perceived a significant improvement in their counselling skills after completing the eight-week online counselling program (Crandell & Weiner, 2002). In a recent survey of 142 final year AuD students, Whicker and colleagues (2018) found that the majority of students reported counselling to be an important aspect of the program.

While these findings show students' perceived benefits towards learning counselling skills, the translation of knowledge into clinical practice is essential to achieve good patient interactions. Although there is little research into students' communication performances in a clinical setting, a survey study was done on 290 AuD students' perception of their clinical encounters (English & Zoladkiewicz, 2005). English and Zoladkiewicz (2005) found students reported feeling ill-prepared in their ability to counsel patients and requested more feedback into their counselling skills (English & Zoladkiewicz, 2005). The three main scenarios include patients becoming angry or hostile, not knowing the answer to the patient's question, and informing

parents their child has a hearing loss (English & Zoladkiewicz, 2005). In a recent interview study, Alanazi and colleagues (2017) asked 17 AuD students to view their own video-recorded simulated infant hearing screen scenario and reflect on their own counselling performance (Alanazi et al., 2017). The 'lack of preparation' was the main theme that emerged from the content analysis as students voiced their lack of counselling knowledge and limited experience to manage difficult scenarios (Alanazi et al., 2017). There is scope for future studies to explore the relationship between students' counselling experiences at different stages of the AuD program and their self-confidence in interacting with patients.

Collectively, students perceived counselling training to be an essential component for professional growth and an important aspect in the audiology program (Atkins, 2007; Herzfeld & English, 2001). However, there is a discrepancy between students' perceived counselling improvements and actual patient interactions. It is possible that the student's theoretical understanding of counselling may not have adequately transferred to actual clinical encounters. It is also of note that most of the presenting research is based in the US context and during the early transition period into the AuD program. This highlights a need to further investigate the adequacy of how clinical communication is currently taught and learned, as well as further analysis into patient-student interaction in a clinical setting.

2.7. Summary and Gaps

This literature review identified the role of audiology education as a contributing factor in the lack of patient-centred interactions in experienced audiologists (e.g. Ekberg et al., 2014;

Grenness et al., 2015a, 2015b). There were three prominent gaps relating to patient-centred communication in audiological education.

The first gap identified was the absence of how patient-centred communication is taught in audiology education programs. Existing literature relating to communication training is skewed towards counselling aspects, which may not adequately include all the functions within the patient-centred communication framework (e.g. Alanazi et al., 2017; English et al., 1999; English & Zoladkiewicz, 2005; Meibos et al., 2017). Little is known about the current educational practices for patient-centred communication in audiology, and whether barriers and facilitators exist in implementing patient-centred communication into the curriculum.

Aside from teaching aspects, the second gap in knowledge is the learners' perspectives in a clinical environment. While past studies have used student surveys to quantify the effectiveness of counselling training (Crandell & Weiner, 2002; Herzfeld & English, 2001; Whicker et al., 2018), it lacked an in-depth insight into students' experiences and clinical encounters. Audiology students' perspectives into their own communication practices can provide an understanding of the effectiveness of current teaching models and potential barriers perceived by the learner. An exploration in this area can help align the teaching and learning aspects to aid the translation of communication training into clinical practice.

Lastly, this chapter has discussed a number of discrepancies between audiologists' and students' perceived attitude towards communication and actual clinical practices. Very few studies have explored the students' clinical communication in a naturalistic clinical environment. Observations into the student-patient communication can provide further insight into additional influences that may not have been detailed from the teacher's or

learner's perspectives. An objective stance can also investigate how students structure their communication and whether it aligns with patient-centred communication.

Collectively, addressing the knowledge gap in these areas can inform recommendations in teaching methods, curriculum design, and training practices to strengthen graduate audiology education.

2.8. References

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Chapter 3. Methodology

3.1. Introduction

Chapters 1 and 2 highlighted the paucity of research into patient-centred communication education in audiology, giving rise to specific aims and research questions on the teaching and learning of clinical communication. This chapter will begin with a discussion surrounding the philosophical assumptions that underpin the methodological approaches to address the research aim. This research is comprised of three studies, hereon referred to as 'audiology teachers' perspectives' (Study One), 'audiology students' perspectives' (Study Two), and 'observational study' (Study Three). An overview of the three studies will be presented, followed by the researchers' background and study setting to help frame the studies, and the methods used in each of the three studies. The final section will draw on strategies to enhance rigour as well as principles of crystallisation and triangulation. Further details of the methods, steps outlining the analytical procedures and findings are outlined in subsequent chapters: the audiology teachers' perspectives study in Chapter 4, students' perspectives study in Chapter 5, and observational study in Chapter 6.

3.2. Worldview

To address the aims and questions of this research, two worldviews were used to construct the philosophical assumptions that guided the methodological processes (Holloway & Galvin, 2017). The first worldview of a constructivism paradigm was selected to address the first two

aims to explore teachers' and learners' perspectives on clinical communication education. This philosophical approach acknowledges that there is no single truth, like that of quantitative studies that the research is striving to measure (Guba & Lincoln, 1994). There are instead, multiple truths or perspectives that are individually constructed based on participants' interpretation of their experiences within the context of their social environment (Grbich, 2007; Guba & Lincoln, 1994). According to the constructivist paradigm, there is also a recognition that the participant's reality is influenced by historical and cultural norms (Creswell & Poth, 2018). Studies in healthcare communication have situated research within constructivism to explore the human experiences of patient interaction and patient outcomes (e.g. de Haes & Bensing, 2009; Ong, Visser, Lammes, & de Haes, 2000). Constructivist studies often use qualitative research methods (e.g. semi-structured interviews) to enable participants to articulate the meaning of their realities (Liamputtong, 2010).

These assumptions are reflected in the study aims to explore teachers' and students' perspectives. The teaching and learning of clinical communication are influenced by the participant's own beliefs and experiences, as well as contextual factors within the professional culture and educational environment. For instance, perspectives on what constitutes effective communication may differ based on different teaching experiences and educational standards that the participant wishes to uphold. The exploration of multiple perspectives or realities provides a wider lens into understanding the facets of communication skills teaching and learning in audiology.

An additional assumption within the constructivist paradigm is that our beliefs and understanding of the world is socially constructed through interactions between human-beings or with the world (Crotty, 1998; Liamputtong, 2010). That is, the epistemology of

constructivism acknowledges that both the researcher and participant have an active involvement in the conduct of the research (Grbich, 2007; Ng, 2013). Under the constructivist paradigm, the researcher's background can have a bearing on the construct of the research and therefore the motivations have been made apparent in section 3.3.2.

The second worldview of pragmatism was chosen to address the research questions on how students conduct communicative tasks in a hearing assessment appointment and whether it is aligned with patient-centred communication. A pragmatic approach was appropriate based on its key characteristics of: emphasis towards the research question, focus on research implications, and the use of multiple methods to address the study focus (Creswell & Poth, 2018; Creswell & Plano Clark, 2011; Johnson & Onwuegbuzie, 2004). The ontology of pragmatism assumes that knowledge can be based on one reality that can be measured or from multiple perspectives formed by individuals (Creswell & Plano Clark, 2011). The epistemological belief enables diverse approaches and draws on 'what works' to answer the research question (Creswell & Plano Clark, 2011). A pragmatic stance carries the perspective of not being constrained by one philosophy as it enables multiple methodological approaches to uncover the implications of the findings (Creswell & Poth, 2018). The data analytic procedures can therefore draw on inductive and deductive approaches to address the research questions of the study.

3.3. Overview of the Three Studies

This section presents an overview of the three studies to address the aims and associated research questions outlined in Chapter 1. Table 3.1. provides an overview of each study aim, worldviews, methodology, data collection and analysis used in each of the three studies. The methodology will be addressed in the next section, followed by the researcher reflexivity and study setting. Each of the three study methods will be discussed in-depth in sections 3.4.2, 3.5.2, and 3.6.2.

Table 3. 1: Research design

Study	One: Teachers' perspectives	Two: Students' perspectives	Three: Observational
Research aims and questions	To examine the perspectives of audiology educators towards PCC, including barriers and facilitators to implementing and developing PCC skills in the university and clinical settings.	i) To explore audiology students' perception of their clinical communication skills during a university-based clinical placement. ii) To explore their perspectives of learning clinical communication in the audiology program.	i) How do audiology students co-construct the main communicative clinical tasks in a hearing assessment appointment under the supervision of a clinical educator? ii) How does students' communication align with the principles of PCC?
Worldviews	Constructivism	Constructivism	Pragmatism
Methodology	Qualitative description	Qualitative description & ethnography	Mixed-methods & ethnography
Study setting	Australia-wide	University of Melbourne	University-based teaching clinics at two Australian universities
Participants	Course coordinators Key teaching staff	Final year audiology students Adult patients Clinical educators	Final year audiology students Adult patients Clinical educators
Data collection	Semi-structured interviews	Semi-structured interviews and video reflexivity	Video-recording
Timeframe	April to August 2016	August to October 2016	August to October 2016
Data analysis and synthesis	Qualitative content analysis	Thematic analysis Crystallisation	Genre analysis & quantitative content analysis

3.3.1. Methodology

Qualitative description

A qualitative description approach was used in the first two studies exploring the teachers' and students' perspectives to address the associated research aims and questions. This approach was appropriate to empower participants to talk about their experiences in order to formulate an insight into their underlying beliefs (Creswell, 2007). The nature of qualitative research was open-ended, evolving and non-directional (Creswell, 2007), which allowed an in-depth understanding of the nature of patient-centred communication education.

To stay close to the participants' accounts, qualitative description analysis was selected to provide a rich description of participants' experiences and prevent the researcher's own interpretation or discrepancies to influence the findings (Neergaard, Olesen, Andersen, & Sondergaard, 2009; Sandelowski, 2000). Although qualitative description is less recognised than other qualitative methods, such as narrative, phenomenology or ethnography, it has been described as one of the most commonly used methodologies in practice disciplines (Neergaard et al., 2009; Sandelowski, 2000, 2010). Qualitative description does not aim to provide thick descriptions, like those in ethnography, nor does it offer theory development such as in grounded theory, or interpretative description, like phenomenology (Neergaard et al., 2009). It does, however, enable the flexibility of borrowing phenomenological overtones to explore a given phenomenon (Sandelowski, 2000). This method is therefore suited for problem identification (Neergaard et al., 2009), such as exploring barriers and facilitators to human behaviour as those in the teachers' perspectives study, and students' perception of their own clinical communication in the second study.

Ethnography

Further to the qualitative description approach, ethnography was used in studies two and three to provide a detailed account of students' perspectives and observations on student-patient interaction. This methodological approach was exploratory in nature and aimed to collect data in a naturalistic setting, often through observational methods (Reeves, Peller, Goldman, & Kitto, 2013). Observational data collection allows for an in-depth understanding of individuals within a particular culture or the workings of an institution such as a teaching clinic (Savage, 2000). Studies situated within the medical context often utilised ethnographic approaches to look at social interactions (Carroll, Iedema, & Kerridge, 2008b; Grant & Luxford, 2009; Iedema, Long, Forsyth, & Lee, 2006). As such, this methodology was selected to explore students' beliefs and whether differences exist in communication practices within the context of a teaching clinic. In the observational study, an ethnographic approach can detail the nuances within the clinical culture and provide a further understanding into underlying structures or systems that might underpin the patient-student interaction.

Mixed-methods

Embracing the pragmatic approach, the observational study adopted a mixed-methods methodology (i.e. combining quantitative and qualitative methods) to address the two research questions. In the current study, the qualitative method entails the observational component on how students structure their communication in a hearing assessment. Quantitative methods were used to capture students' patient-centred communication skills to provide a degree of generalisation and trend in the findings.

The justification for choosing a mixed-methods design was guided by Bryman (2006), who suggested that researchers need to specify at least one reason to justify why the methods are combined. In the observational study, the reasons for selecting a mixed-methods methodology were:

i) Triangulation: combining qualitative and quantitative findings for corroboration.

ii) Offset: acknowledging that qualitative and quantitative methods have both strengths and weaknesses, combining the two methods can offset the weaknesses and draw on the strengths.

iii) Completeness: enabling a thorough account to address the research focus.

iv) Explanation: where qualitative findings can help explain quantitative findings.

v) Utility or improving the usefulness of findings: where combining qualitative and quantitative approaches will generate a greater applied focus.

vi) Enhancement or building on qualitative/quantitative findings: using qualitative or quantitative findings to inform other methods (Bryman, 2006, p.106-107).

Guided by Creswell and Clark (2011), the following decisions were made to determine the degree of integration between the qualitative and quantitative methods. The first decision was the integration during data collection where the observational data was the basis for qualitative and quantitative analysis. The second decision was to place a greater priority towards the qualitative component due to the exploratory and descriptive nature of the research questions given the scarcity of research on students-patient communication. The final decision was the synthesis of qualitative and quantitative components, which occurred in the discussion where the findings were triangulated

3.3.2. Researcher Reflexivity

In all three studies, it was acknowledged that the researcher played an active role in the construction of this research. As the main researcher, I want to maintain the transparency of any underlying motivations or preconceived ideas that may influence the research process (i.e. data gathering, analysis, and presentation). The act of self-description and reflexivity is an important aspect of qualitative research (D'Cruz, Gillingham, & Melendez, 2007; Mauthner & Doucet, 2003); therefore, this section will provide a brief background on my role and how the insider/outsider perspectives were reflectively taken into consideration over the life of the project as these aspects shape the research process including the researcher-participant interaction.

Prior to commencing my PhD in 2015, I was working as a full-time audiologist and clinical educator at The University of Melbourne. My teaching role consisted of supervising audiology students during their university-based clinical placements, as well as running tutorials and sessional lectures. The one-to-one discussions with students were a wonderful opportunity to understand students' experiences and offer feedback on the current teaching. During this period, I witnessed students' (and admittedly my own) focus on technical competencies over patient-centred communication skills. Reflecting on when I studied in the audiology program about a decade ago, the disconnection between communication and technical skills from my perspective continued to exist in the current teaching curriculum. Knowing that the role of education can have a significant impact on students' clinical skills and the quality of hearing care provision, I was motivated to commence a PhD to explore factors that influenced clinical communication education in audiology.

Over the past three years, my exposure to communication skills literature has certainly unveiled the complexities in implementing communication skills teaching. The learnings of different communication frameworks have made me more reflective about the quality of patient-clinician interactions, including self-reflection of my own clinical practice. The newfound knowledge has not only been advantageous in aiding my understanding of teachers' and students' perspectives but also in the analysis of students' communication in the observational study. My background as a clinical educator is described as having an insider perspective (Holloway & Galvin, 2017), which is advantageous in that participants need not explain their role or background to gain mutual understanding. This knowledge facilitated a deeper insight into the structure of a clinical placement at different universities, how clinical communication is taught and learned at a tertiary level, and students' perspectives when different hearing aetiologies were described. However, to ensure my own knowledge or preconceived ideas about the topic did not influence the research process, I was conscious to undergo a reflexive process throughout this project to ensure the data is a true representation of the participants. For instance, I was mindful to adopt a non-judgmental stance in the first two studies to ensure participants' viewpoints were openly received without prejudice or biases from my own knowledge about audiology education. Additionally, the development of mutual trust between myself and the participants was important to unveil their true thoughts and feelings of a situation (Holloway & Galvin, 2017). During the data analysis, I adopted an inductive approach and used the participant's quotes to represents their own perspectives. This process is often described as 'bracketing' within phenomenological research whereby the researcher's suppositions are bracketed out in order to understand participants' lived experiences (Gearing, 2004). It is a process to increase the rigour of qualitative research (Tufford & Newman, 2010).

3.3.3. Study Setting

This research was conducted in the Australian audiology teaching context. There are six Australian universities that offer a two-year Masters' of Clinical Audiology program: Flinders University (South Australia), La Trobe University (Victoria), Macquarie University (New South Wales), The University of Queensland (Queensland), The University of Melbourne (Victoria), and The University of Western Australia (Western Australia).

In most of these universities, clinical communication is taught as part of a compulsory subject (e.g. Clinical Audiology) using a variety of teaching methods such as lectures, full-day workshops, class discussions, video-analysis, and role-play exercises. The application and further development of students' clinical communication are expected to occur during clinical placements. To meet the national qualification standards in Australia, students are required to complete a minimum of 250 supervised clinical hours over the two-year course period (AudA, 2017). Clinical placements can be offered at university-based and/or externally-based audiology clinics that provide hearing services to the general public. At university-based clinics, clinical educators are employed to oversee, supervise and assess students on clinical placements. While there is no formal professional development for clinical educators, in-house workshops are offered at some universities on how to provide student feedback.

The number of students allocated to a clinic can vary depending on the number of clinics available and student cohort. Students may be allocated individually or in pairs under the supervision of a clinical educator. Prior to the commencement of the clinic, the students' role is negotiated and approved by the clinical educator. For instance, where students are working in pairs, one student may conduct the history taking and the second student will conduct the

hearing assessment. Additional time is often allocated for each appointment to allow students the opportunity to carry out assessments independently.

3.4. Study One: Audiology Teachers' Perspectives

3.4.1. Study Design

A qualitative study design was used to explore audiology teachers' perspectives into the barriers and facilitators to teaching patient-centred communication.

3.4.2. Methods

The recruitment procedure, ethics and analytical procedures are detailed in Chapter 4, therefore this section will provide an overview of the participants, data type and data analysis procedures.

Participants

To explore teachers' perspectives towards clinical communication, program coordinators and nominated key teaching staff from all six Australian universities that offer a Masters of audiology course were purposively selected to participate in the study.

Data: Semi-structured interviews

Individual semi-structured interviews were chosen to collect multiple perspectives and provide an in-depth understanding of teachers' and students' perspectives of clinical communication education. Interview techniques were chosen as it empowers participants to talk about their experiences and formulate an insight into their underlying beliefs (Creswell, 2007). As opposed to structured interviews where answers fit within pre-defined questions, semi-structured interviews provided more flexibility in allowing participants' perspectives to unfold in a conversational manner (Gibson & Brown, 2009). As a result, there was less structure and formality during the interviews (Gibson & Brown, 2009), and the interviewer may disclose her own experiences to remove barriers. This interaction was in line with the constructionist worldview where knowledge is actively co-constructed by the researcher and participant.

Qualitative content analysis

Qualitative content analysis was used to analyse the transcribed interview data from the audiology teachers' perspectives. While content analysis has been described as 'a technique which lies at the crossroads of qualitative and quantitative methods' (Duncan, 1989, p.27), the application of this technique can make inferences from verbal, visual or written data (Downe-Wamboldt, 1992; Kondracki, Wellman, & Amundson, 2002). Content analysis has gained popularity in healthcare research as one of the main methods to analyse text data (Hsieh & Shannon, 2005). Qualitative content analysis uses an inductive approach to data analysis where the researcher allows new insights to emerge through the data (Kondracki et al., 2002; Potter & Levine-Donnerstein, 1999).

The qualitative content analysis method from Graneheim and Lundman (2003) was adopted to analyse the themes from teachers' perspectives. This method of analysis was originated from the nursing discipline and had since been utilised in other health disciplines (e.g. Ekdahl, Andersson, & Friedrichsen, 2010; Grenness, Hickson, Laplante-Lévesque, & Davidson, 2014; Wilstrand, Lindgren, Gilje, & Olofsson, 2007). The first step of the analysis involved identifying *meaning units* from the transcribed audio-recording, which is defined as a collection of words or statements that were related to another through context (Graneheim & Lundman, 2003). This was followed by condensing and grouping meaning units into codes, which was then further grouped into categories. The categories were described as manifest content, which is staying close to the raw data (Graneheim & Lundman, 2003; Kondracki et al., 2002). The final step was to further analyse the latent content to generate themes. Latent content is a process of delving deeper into the underlying meaning of the message (Potter & Levine-Donnerstein, 1999). This required a degree of interpretation to uncover the inferred meanings from a broader context (Graneheim & Lundman, 2003; Graneheim, Lindgren, & Lundman, 2017). The steps in this procedure were in line with Sandelowski's argument that qualitative description studies are more than just a provision of rich descriptions as they entail both manifest and latent content processes to provide an in-depth analysis of the data (Sandelowski, 2000, 2010).

3.5. Study Two: Audiology Students' Perspectives

3.5.1. Study Design

Study two also adopted a qualitative design to explore students' perspectives of their own clinical communication and learning patient-centred communication.

3.5.2. Methods

This section provides an overview of the participants and expansion of the data analysis. Further details on the recruitment procedure, ethics and analytical procedures are contained in Chapter 5.

Participants

Final year University of Melbourne (UoM) audiology students who were in their final semester were invited to participate in this study. The rationale for selecting students in the final stages of the audiology program was for two main reasons. First, students just prior to graduation are expected to have a sound theoretical knowledge and technical audiological skills. Second, students are expected to have accrued a considerable amount of clinical experience to meet the national qualification standards. The supervising clinical educator and an adult patient who had a scheduled clinic with the student participated in the observational component of the study.

Of note, the student's perspectives and observational data for studies two and three were collected concurrently between August and October 2016. While the observational data were collected at two universities, due to timetabling constraints and resource limitations, UoM students were the main focus for the reflexive interview study.

Data: Semi-structured interviews with video reflexivity

Video reflexivity was incorporated with the semi-structured interview to assist students to discuss and recall salient issues that may have occurred during the patient interaction. This technique was adopted to account for any contextual influences within the clinic where students' hearing assessments were conducted and to facilitate self-awareness on their own communication (Creswell & Poth, 2018).

The first part of the study was to video-record the student's hearing assessment appointment, which was collected as part of the observational data for study three. The second part of the study was to invite students to co-view their clinical encounter as part of the semi-structured interviews, which followed the procedural guidelines of video reflexivity as detailed by Iedema and colleagues (e.g. Carroll, 2009; Carroll, Iedema, & Kerridge, 2008; Iedema, 2011). The semi-structured interviews were conducted within two weeks of the observational data collection to maximise students' recall of their communication performance.

In accordance with the constructivist paradigm, the researcher played an active role during the video-reflexivity process by taking on an insiders' lens to facilitate the students' perspectives (Guba & Lincoln, 1994). The task of co-viewing the student's filmed clinical encounter helped reduce the objective distance between the researcher and participant. Specifically, the

interview questions centred on why students communicated or carried out the appointment the way they did, and what teachings influenced their communicative behaviours.

Thematic analysis

The audio-recordings of the semi-structured interviews were transcribed and analysed thematically to explore the salient themes from students' responses. Similar to content analysis, an inductive approach was used to generate themes from the data. The purpose of thematic analysis was to identify, analyse and report patterns in the data (Braun & Clarke, 2006). There is flexibility in the generation of a theme, where it is not bounded by the prevalence of the code, but whether it captures an important element in relation to the research aims, that is, the essence of what influences students' clinical communication learning (Braun & Clarke, 2006; Ryan & Bernard, 2015). The thematic analysis procedure was informed by Braun and Clark's (2006) six-phase process outlined in Table 3.2. This procedure has been frequently used in health and social science literature (Bradbury-Jones et al., 2017). Further details of the process are described in Chapter 5.

Table 3. 2: Phases of thematic analysis

Phase	Description of the process
1. Data familiarisation:	Transcribe data Read and re-read the data Note initial ideas
2. Generate initial codes:	Systematically code data of interest across the entire data set Collate data relevant to each code
3. Search for themes:	Group codes into potential themes Gather all data relevant to each potential theme
4. Review themes:	Check whether the potential theme fits into the coded extracts and the entire data set Generate a thematic 'map' of the analysis
5. Define and name themes:	Refine each theme, and the overall story the analysis tells Generate clear definitions and names for each theme
6. Produce the report:	The final opportunity for analysis. Selection of vivid, compelling quote

> Relate the analysis back to the research question and literature, producing a scholarly report of the analysis.
>
> (Braun & Clarke, 2006, p.87)

3.6. Study Three: Observational Study

3.6.1. Study Design

The third study selected a mixed-methods design to investigate how students conducted the main communicative task in a hearing assessment appointment and whether students' communication aligns with the principles of patient-centred communication.

3.6.2. Methods

The recruitment procedure, ethics and analytical procedures are detailed in Chapter 7. This section provides an overview of the participants and expansion of the two data analysis procedures.

Participants

Final year students from two Australian universities (University A and University B), and the clinical educator and adult patients who were scheduled in the clinical placement were invited to participate in the study. The participants in the second study on students' perspectives were also part of this study. The selection of University A and B for this study was based on these universities being the only institutions to offer university-based clinical placements to final-year students during the research period.

Data: Video-recording of a hearing assessment appointment

In qualitative research, an observation approach is an appropriate tool to study behaviours and interactions in a naturalistic setting (Gibson & Brown, 2009; Mays & Pope, 1995). Video-recordings were adopted as a method to observe students' communication practices in a hearing assessment appointment. This method has previously been used in a number of clinician-patient interactional studies both in the audiology discipline, and other health professions (Ekberg et al., 2014; Grenness et al., 2015a, 2015b; Latvala, Vuokila-Oikkonen, & Janhonen, 2000; Pires & Cavaco, 2014; Themessl-Huber et al., 2008). Video-recording was chosen as opposed to audio-recording to assist in the exploration of the three-way data interaction (i.e. between the student, patient and supervising clinical educator) and any non-verbal elements to likewise assist with transcription. In addition, findings from the observational study can be synthesised with the first two studies on audiology teachers' and students' perspectives through crystallisation. Chapter 7 presents the discussion of any discrepancies between students' subjective bias (i.e. in Study Two) and students' actual communicative behaviour during the appointment (i.e. in Study Three).

Despite the benefits of video-recordings, consideration must be made on the possibility that the participant's behaviour may be modified knowing that they were being recorded (Latvala et al., 2000; Mays & Pope, 1995). Although participants may feel anxious knowing the presence of the video camera, participants generally do become relaxed over time (Latvala et al., 2000). To minimise any alterations in participants' behaviour, the video-recorder was kept out of sight where possible. The researcher also reassured all participants that the findings would not influence their academic performance or patient management.

Genre analysis

A discourse approach informed by genre analysis was adopted to explore the macro-structural perspective of communicative events in a hearing assessment appointment. The study of discourse has traditionally been described as a study of 'language in use' (Wetherell, Taylor, & Yates, 2001, p.3). The term discourse carries the assumption that language is structured, where people's utterances follow particular patterns within a given context, such as during a hearing assessment appointment (Jorgensen & Philips, 2002). Within a discourse approach, genre is defined as 'a staged, goal-oriented social process' (Martin & Rose, 2003, p.7). Genres are referred to as staged because they involve distinct phases to reach a goal-oriented component such as a telephone inquiry with recognisable and predictable phases of greetings, inquiry, information provision, resolution, and closing. The social process refers to the human participant component, such as the student-patient interaction. Therefore, genre analysis was appropriate for the observational study to identify how the students, clinical educator and patients co-constructed the hearing assessment to achieve their interactional goals.

The study adopted the first four of the six-step procedure to genre analysis outlined by Eggins and Slade (1997) Table 3.3. provides a description of each step in the analysis. The final two steps of 'devising a structural formula' and 'analysing semantic and lexico-grammatical features for each stage' were not incorporated as the depth of linguistic analysis was beyond the scope of the study and not the focus of the research questions.

Table 3. 3: Six-steps in genre analysis

Steps	Description of procedure
1. Recognising a chunk:	Recognise when one speaker directs the conversation Where the conversation moves through specific stages
2. Define the function of the genre:	Defining text that forms the function or social purpose of the genre Labeling it as a genre
3. Identify stages within the genre:	Assigning functional labels to the genre Identifying how the labels relate to one another
4. Specifying optional stages:	Determine any optional stages within the genre
5. Devising structural formula:	Describe genre as a linear sequence
6. Linguistical analysis:	Analysing semantic and lexico-grammatical features for each stage

(Eggins & Slade, 1997, p.230-235)

Quantitative content analysis

In addition to genre analysis, quantitative content analysis was also employed as an analytical tool for the observational study. Unlike qualitative content analysis, *quantitative* content analysis follows a structured, deductive approach based on pre-existing theory and classification scheme to analyse the data (Hsieh & Shannon, 2005; Kondracki et al., 2002; W. J. Potter & Levine-Donnerstein, 1999). To analyse students' patient-centred communication in the case history, and diagnosis and management phases, *The Patient-Centred Analytical Frameworks for Audiology* were developed using a theory-based definition of patient-centred communication as a coding scheme.

A literature review on the existing patient-centred communication models and frameworks were carried out to explore differing methodologies in analysing the student-patient video-recordings. The analytical framework used in the study was developed from de Haes and Bensing's (2009) Six-Function model of medical communication. The six-functions were

derived from a synthesis of patient-centred communication models in the medical literature and its relationship on patient outcomes (de Haes & Bensing, 2009). The functions include: fostering the relationship(s), gathering information, providing information, decision-making, enabling disease and treatment behaviour, and responding to emotions (de Haes & Bensing, 2009). The coding scheme was guided by Epstein and Street, and King and Hoppe, who provided exemplars of patient-centred communication within each function (Epstein & Street, 2007; King & Hoppe, 2013). Each code was discussed with the supervisory team to account for the appropriateness within the audiology context. During the analysis, modifications of existing codes and formulation for additional codes during the encounter were added to the coding framework. In addition, the video recording of each hearing assessment case was viewed to account for verbal (e.g. intonation, stress) and non-verbal cues (e.g. eye contact, body language) that may be associated with the codes. The number of codes for each of the communication tasks, and for each hearing assessment case provided a basis for quantitative data analysis. Further detail on the coding and analytical procedures is provided in Chapter 6.

3.7. Strategies to Enhance Rigour

With the overall research design being predominately qualitative, a number of strategies were implemented throughout to ensure rigour and trustworthiness were maximised across the three studies.

A pertinent criterion in conducting qualitative research is confirmability, where the interpretation of findings reflects those of the participants and not researchers' motivations, biases or pre-existing assumptions (Lincoln & Gubba, 1989). In addition to the researcher's

reflexivity as described in section 3.3.2., to maintain objectivity and avoid preconceptions towards the interpretation of participant responses, all transcripts were de-identified prior to data analysis.

Across all three studies, peer debriefing and auditing by co-authors were conducted to foster dependability and credibility (Holloway & Wheeler, 1996; Long & Johnson, 2000). That is, to promote consistency of results, and accuracy in the depiction of participants' viewpoints (Padgett, 2008; Raines, 2008). In the first two interview studies, regular meetings were conducted between the main researcher and co-authors to audit the coding process. Discussions were made surrounding any discrepancies in the interpretation or generation of themes (Knudsen et al, 2012). Similarly, in the observation study, peer debriefing was particularly vital for the development of the analytical framework and robustness of the coding scheme to ensure definitions and inferences were made clear to carry out the data analysis. The process included performing a pilot analysis, and documenting changes made in the coding schemes. To check the consistency of coding, the main researcher re-coded the first set of manuscripts to ensure the coding scheme did not change over time. Furthermore, to ensure reproducibility, auditing was performed by co-authors where each researcher coded a sample to ensure the same patterns were produced (Potter & Levine-Donnerstein, 1999).

3.8. Crystallisation and Triangulation

The principles of crystallisation and triangulation were used during various stages to synthesise the findings from the three studies and to formulate an in-depth understanding of the inquiry, that is, patient-centred communication education in audiology.

Crystallisation and triangulation share a similarity of combining multiple data forms and analysis to generate a better understanding of the inquiry (Ellingson, 2009). There are, however, fundamental differences in the philosophical stance. Triangulation assumes the credibility of findings are enhanced when different methods of data, theoretical frameworks or researchers generate the same findings (Denzin, 1978). It therefore, draws on a positivist stance of a single reality and is appropriate for the mixed-methods approach in the observational study (Tracy, 2010). The combination of qualitative and quantitative findings was used for corroboration (see Chapter 6).

In contrast, Tracy (2010) describes that crystallisation does not 'provide researchers with a more valid singular trust, but to open up a more complex, in-depth, but still thoroughly partial, understanding of the issue' (p.844). Collectively, in the current qualitatively dominant research, the constructivist paradigm drew upon multiple realities that are shaped by different lenses, researchers and participants. It also acknowledges that knowledge is never unbiased and that the research process is co-constructed by participants and the researcher. Therefore, to appreciate the complexities and depth of the qualitative findings, the concept of crystallization was used to synthesise the results.

In the current research, the process of crystallisation was done by synthesising the themes from teachers' and students' perspectives to obtain a deeper understanding of the educational stance in patient-centred communication. Ellingson (2009) described the use of multiple analytical methods as juxtaposing different ways of knowing and to draw out the subtleties of the phenomena. The use of semi-structured interviews, video-reflexivity, and observational approaches in the research explored different angles of the investigation and strengthens the

credibility and trustworthiness of the research study (Tracy, 2010). Chapter 7 will further discuss the integration of the research findings.

3.9. Summary

This chapter describes the methodologies and rationale for methodological decisions for the study: it also includes an outline of the three studies including the philosophical assumptions, methods, and analysis. The background and decisions for the methodological choices for the three studies will help foreground the subsequent chapters (i.e. Chapters 4, 5, and 6) from the results of the studies.

3.10. References

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Chapter 4.

Audiology Teachers' Perspectives into Teaching Communication Skills

4.1. Introduction

This chapter presents the first research study on audiology program coordinators and teaching staff's perspectives of teaching and learning patient-centred communication. The manuscript was published in the International Journal of Audiology online in 2017 and presents the inclusive of references and journal specific headings.

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Competing agendas and other tensions in developing patient-centred communication in audiology education: a qualitative study of educator perspectives

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4.2. Abstract

Objective

Patient-centred communication (PCC) is an essential skill for effective healthcare provision and is accepted as a core competency in medicine and allied health. In audiology, recent studies have shown that audiologists rarely display PCC in adult hearing interactions. This highlights a need to investigate how PCC is taught and learnt in audiology. There is a paucity of studies on PCC in audiology education. The aim of this study is to examine educator perceptions of teaching PCC, including barriers and facilitators, in Australian graduate audiology programs.

Design

Semi-structured interviews were conducted with audiology educators responsible for communication training. Interview transcripts were analysed using qualitative content analysis.

Study Sample

Nine participants, including program coordinators and key teaching staff from all six Australian audiology programs participated in the study.

Results

PCC education was found to be influenced by four emerging themes: professional culture and values, contextual factors, knowledge and understanding of PCC, and individual factors.

Conclusions

These results provide an insight into the competing agendas involved in implementing PCC education in both the university and clinical component of audiology programs. The findings can play a role in refining and building the evidence-base for teaching and facilitating patient-centred audiological care in future audiologists.

4.3. Introduction

Patient-centred care is an approach that is widely accepted in healthcare disciplines. The interaction between the clinician and patient through patient-centred communication, referred to as PCC in this manuscript, is advocated as an integral component of delivering quality healthcare (Pinto et al, 2012). When clinicians take a holistic approach to care, invest in building a therapeutic relationship and recognise patients' psychosocial concerns, adherence to recommendations and better patient health outcomes follow (Mead & Bower, 2000; Pinto et al, 2012). In several health professions including medicine (Brown & Bylund, 2008) and physiotherapy (Parry & Brown, 2009b), PCC is regarded as a core component of the curriculum.

In medical settings, PCC has been delineated into functional components that influence patient outcomes, including fostering the relationship, providing information, and responding to emotions (de Haes & Bensing, 2009). Despite the lack of a profession-specific definition of PCC in audiology, emerging studies in adult hearing rehabilitation have specified key components that resonate with those identified in the de Haes and Bensing's (2009) systematic review. These include: building a therapeutic relationship, which is central to fostering quality patient-

clinician interaction (Grenness, Hickson, Laplante-Lévesque, & Davidson, 2014); information exchange to ensure the patient is informed and mutual understanding is promoted (Grenness et al., 2014a; Laya Poost-Foroosh et al., 2015); shared decision-making in which the patient is actively involved in the decision of management (Grenness et al., 2014a; Laplante-Lévesque, Hickson, et al., 2012; Preminger et al., 2015); and acknowledging patient's psychosocial concerns throughout the clinical encounter (Ekberg et al., 2014; Grenness et al., 2015b).

In audiology, hearing impairment can restrict an individual's participation in daily activities, thus impacting on a person's quality of life (Chia et al, 2007). Evidence towards the benefits of PCC is growing (Grenness et al., 2014; Poost-Foroosh, Jennings, Shaw, Meston, & Cheesman, 2011). Studies have shown audiologists' interpersonal and communication skills can influence the perceived quality of service and rehabilitation outcomes (Laplante-Lévesque, Hickson, & Worrall, 2010; Poost-Foroosh et al, 2011). For example, Poost-Foroosh et al (2011) conducted a focus group study to investigate factors in the patient-audiologist interaction that impacted hearing aid adoption. Patients reported wanting their audiologist to provide information and empower them to be involved in the decision-making process, as well as displaying an understanding of and meeting patient needs (Poost-Foroosh et al, 2011). Similarly, in a study identifying the perspectives and experiences of older adults with hearing aids, Grenness et al (2014) found patients indicated a preference towards audiologists who listened, showed empathy and who were interested in their emotional concerns. These results suggest that clinicians with knowledge and skills in PCC are likely to better align with patient preferences. These findings resonate with findings in other health professions, such as medicine, where information exchange coupled with shared decision-making can lead to patient adherence with treatment and improved health outcomes (Mead & Bower, 2002).

Despite the growing evidence-base for benefits of PCC in audiology, recent studies reveal a gap between theory and clinical practice; that is, PCC was rarely adopted during initial adult consultations which included testing and rehabilitation discussions (Ekberg et al., 2014; Grenness et al., 2015a, 2015b). The clinical setting of these studies were predominately adult hearing assessments and rehabilitation, where audiologists had a tendency to prioritise biomedical topics (e.g. audiometric results and hearing aids) over engagement with patients' psychosocial concerns (Ekberg et al, 2014). It is likely that the modelling of communication in audiology is that of a focus on biomedical content and technical skills, despite audiologists' self-reported preference for patient-centred communication (Laplante-Lévesque et al., 2014). While the deficit in PCC may be influenced by a number of factors, including time constraints and organisational culture, one possible reason may be inadequate skills. Studies have reported that audiologists can feel ill-prepared in difficult communication scenarios such as talking with patients and family members about hearing impairment (Herzfeld & English, 2001; Martin, Barr, & Bernstein, 1992). Inadequate capability or lack of confidence may be due to a small focus on teaching and learning or training of PCC in the curriculum or how it is taught.

Academic preparation has a profound effect in shaping the future of the audiology profession, yet there is a paucity of research examining PCC education from a teaching and learning perspective. Existing research into PCC or counselling education in audiology is limited to the American setting. Several studies point out that there is an insufficient focus on PCC in graduate audiology programs (English & Weist, 2005; English & Archbold, 2014; Flasher & Fogle, 2004). Early studies in America showed approximately only 20% of the accredited audiology programs provided compulsory PCC education (Crandell, 1997; Culpepper et al., 1994). One explanation is that the audiological profession was developed from a biomedical

context, in which substantial emphasis was placed on finding the 'site-of-lesion' through diagnostic hearing assessments (Pichora-Fuller & Singh, 2006). Hence, technical skills are prioritised over PCC competencies, thus the patient-clinician interaction becomes biomedical in nature (Berg et al., 2008). Communication skills teaching can also be hindered by university constraints. Results of a survey study of 77 Heads of University Audiology Departments reported barriers to incorporating communication skills training included: lack of funding, shortages of educators, and time constraints within the curriculum (Crandell, 1997).

As the scope of audiology practice expands to re-emphasise rehabilitative services for a range of auditory impairments (ASHA, 2004), PCC is increasingly acknowledged by various audiology professional bodies. For instance, the British Society of Audiology has provided practice guidelines to incorporate client-centred care to facilitate the hearing rehabilitation process (BSA, 2016). The American Speech-Language Hearing Association (ASHA) has incorporated counselling skills as part of audiologists' scope of practice (ASHA, 2004). In this instance, counselling refers to the audiologist's ability to support patients' emotional and psychological concerns arising from their hearing impairment, which is encapsulated as a component of PCC. A similar emphasis on PCC has been introduced by Audiology Australia into its Professional Practice Standards in hearing rehabilitation (AudA, 2013). These regulatory developments are resulting in increased pressure for audiology programs to incorporate PCC into the curricula (Poole & Solomon, 2010).

In the United States, audiology programs have transitioned from a two-year Masters to a four-year Doctorate of Audiology (AuD). With this transition, there has been an emphasis on teaching PCC skills whilst maintaining the acquisition of proficient diagnostic and management competencies (English & Weist, 2005). Despite the increase in PCC education in the audiology

curriculum, an online survey of 290 AuD students found that students' discomfort with their communication ability persists (English & Zoladkiewicz, 2005). In recent years, a number of AuD programs have introduced experiential teaching using simulated or standardised patients into the curriculum to improve students' patient interactional skills (e.g. Alanazi et al., 2017; Naeve-Velguth, Christensen, & Woods, 2013). Although students generally valued experiential teaching methods, there are still reports of a lack of knowledge and of opportunities for practical experience (Alanazi et al., 2017). This suggests that further research is needed to refine the teaching and learning of PCC.

In Australia, audiology education is a two-year Master's program. To date, there have been no studies exploring how communication skills and PCC as a component of communication skills are taught and fostered in the Australian setting. Further, from an international perspective, there has been no recent exploration of the contextual factors influencing PCC education in audiology. Therefore, this study aimed to examine the perspectives of audiology educators towards PCC, including barriers and facilitators to implementing and developing PCC skills in the university and clinical settings. These findings could inform the development of evidence-based communication curricula to shape future audiology professionals.

4.4. Method

4.4.1. Study Design

This qualitative study was conducted between April and August 2016 in Victoria, Australia under the ethical oversight of The University of Melbourne Behavioural and Social Sciences

Human Ethics Sub-Committee (Ethics ID: 1545971). The study adhered to the principles of the Australian National Health and Medical Research Statement on Research Involving Human Subjects. A descriptive qualitative research design using individual semi-structured interviews was undertaken (Sandelowski & Sandelowski, 2000). As the researcher is a clinical educator, a reflective process of being self-aware of preconceptions or experiences and consciously recognising differences in participants' responses was adopted throughout the different phases of the study (Ben-Ari & Enosh, 2011).

4.4.2. Recruitment and Sampling

In this national study, program coordinators and key teaching staff from all six Australian graduate audiology programs were purposefully selected to capture perspectives of PCC teaching in the Australian educational context. Program coordinators were selected due to their involvement with the course curriculum and knowledge of the teaching context. In addition, where the program coordinator was not the key informer of the teaching content, an additional teaching staff member was purposefully invited to participate. Of the thirteen participants who were invited, nine participants agreed to participate in the study and four participants were unavailable due to other commitments. Program coordinators from each university participated. Table 4.1 summarises the participant characteristics.

Table 4. 1: Characteristics of course coordinators and key teaching staff (n = 9)

Characteristic	Number of participants (n)
Gender	
Female	6
Male	3
Level of Qualification	
PhD	8
Masters	1
Teaching Role	
Associate Professor	1
Senior Lecturer	5
Lecturer	3
Teaching Experience (years)	
Mean	12.9
Range	6 to 20
Training in Communication Related Education	
Yes	5
No	4

4.4.3. Procedures

The first author (ST) conducted semi-structured qualitative interviews with participants, either in person (n = 4) or over Skype (n = 5). An interview guide was developed by the authors to address the different facets of patient-clinician communication and PCC. This was used in all interviews to explore participants' understanding of PCC in audiology; how clinical communication is taught; and, participant perspectives of teaching and learning communication, including barriers and facilitators. Interviews were audio-recorded using an Apple iPod touch or iPad and transcribed verbatim with identifying information removed. The average duration of the interviews were 48 minutes (range 23 to 63 minutes).

4.4.4. Analysis

An inductive qualitative approach and content analysis were used to explore participants' perspectives and experiences in communication skills teaching as highlighted in a review by Knudsen et al (2012). The transcribed interviews were imported to NVivo 11 software for data management and analysis. The interview transcripts were first broken down into a total of 1,509 meaning units by one researcher; that is, a collection of words containing a central meaning (Graneheim & Lundman, 2004; Knudsen et al, 2012). The meaning units that shared a common central meaning were grouped into 503 codes, which were generated using excerpts from the meaning units. At this point, codes that were unrelated to the research questions were excluded from the analysis. In the abstraction process, codes with the same underlying meaning were conflated into 11 categories. In the final stage, four interrelated themes were generated by exploring the underlying essence that transcended through the categories, codes and meaning units (Graneheim & Lundman, 2004).

To maintain rigour and credibility during each stage of the analysis, the first author independently presented the analysis to the other authors at regular meetings for discussion and verification. Agreement and discussion of differing interpretations were made throughout category generation to verify the findings (Knudsen et al, 2012). Dependability was maintained through regular meetings with researchers who are experienced in qualitative research and confirmability was achieved through documentation of the research process.

4.5. Results

There were four interrelated themes. These were: professional culture and values; contextual factors; knowledge and understanding of PCC; and individual factors (Figure 4.1.). The following section presents each theme and associated category, along with brief participant quotes to illustrate these themes.

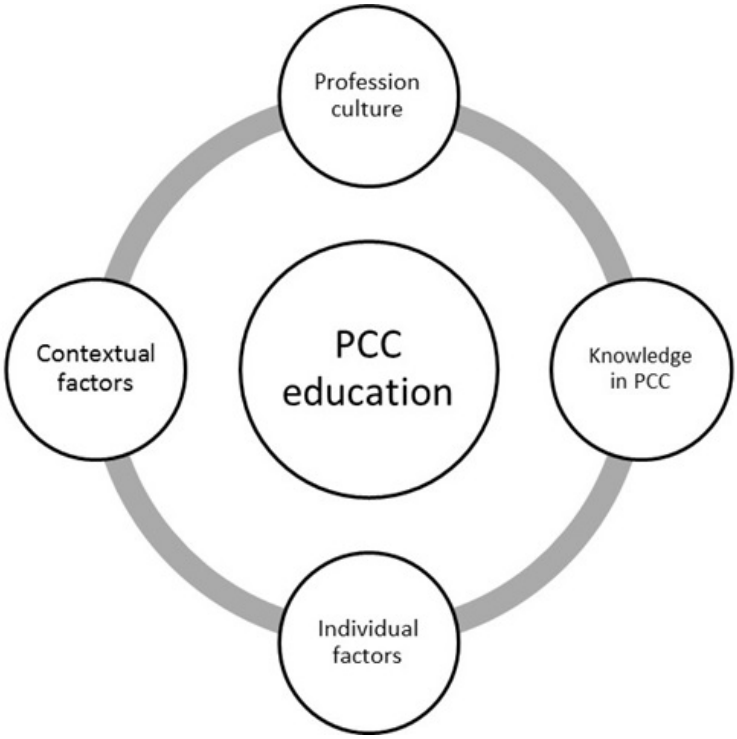

Figure 4. 1: Interrelationship between the four themes on PCC education

4.5.1. Theme One: Professional Culture and Values

This theme relates to participants' perspectives regarding the high-level impact the audiological professional culture has on curriculum development. This includes audiologists' widely held values, beliefs and attitudes towards technical skills and patient-centred care, which both hinder and facilitate PCC education.

Technical Skills

Participants described the culture of the audiology profession as 'biomedically-driven'; that is, where technical skills (e.g. conducting diagnostic assessments, fitting hearing devices, and generating device-related management options) are, and have historically been, prioritised. Consequently, the audiology profession's deep-seated attitude towards technical skills was described as a hindrance to PCC education, and characterised by audiologists' reluctance to change.

> *I think we are unfortunately technically driven, and procedurally driven profession which has shaped the people who join and many of the attitudes.* (Participant 2, male)

To move away from the biomedical tradition, participants reported that a renewed focus on patient-clinician interaction and an increase in communication skills teaching is needed in most audiology programs. That is, audiology programs have a role to play in addressing the future needs of the profession in which communication skills teaching will take precedence.

> *We want to … get that emphasis back on the communication and counselling… because that's where the future of the profession is going, in particular, it's going to be less technically driven… I think we need to improve… our teaching for the future audiologists, for future needs.* (Participant 1, female)

Academic staff and students' valuing of patient-centred care

Academic staffs' valuing of patient-centred care was perceived as a key facilitator in PCC education. This was displayed in academic staffs' motivation and drive to implement PCC teaching to facilitate students' patient interaction in the audiology program.

> *There is definitely a motivation… from [academic] staff to improve training, improve competencies and client centred care... The desire… [and] efforts is there… where people are trying to improve these areas.* (Participant 6, male)

Students' valuing of patient-centred care reportedly decreased during the program. Participants reported that they observed students putting a greater emphasis on patient needs at the commencement of the program. However, as students acquire more knowledge during the program, their attentiveness to patients' needs reportedly diminished.

> *In the first few weeks of the program… [students] are very focused on the person. Then when we learn all the terms they're very focused on showing the client, "I know this, I know this, I know this." They use a lot of jargon, they become less client focused.* (Participant 9, female)

Some participants associated students' perceived devaluation of patient-centredness with learning preferences towards technical skills. Unlike PCC skills, technical skills have clearly defined rules that are easily practiced and rote-learned by students. Thus, students' preference towards acquiring technical skills can overshadow the importance of learning PCC.

> *[Students] are much more focused on pushing the right buttons rather than appreciating that all button pushing is only a small part of what they have to do for that patient.* (Participant 8, female)

4.5.2. Theme Two: Contextual Factors

The contextual factors in this theme relate to the barriers posed by: university obligations and resources; organisational factors in hearing clinics where placements take place; and a perceived misalignment between university teaching and clinical practice.

University obligations and resources

Participants discussed their university obligations to ensure the program adheres to accreditation standards governed by the professional body. For instance, participants reported that the audiology curriculum is heavily skewed towards technical competencies to meet the accreditation criteria. Consequently, some teaching decisions are made which may not always align with what staff perceive to be most valuable for students and the profession.

> *There aren't so many formal accreditation criteria, looking at patient-centred communication and the skills surrounding that... If it isn't included heavily in those, it's not going to get the same attention.* (Participant 4, male)

Another barrier towards PCC education was related to restrictive university resources. For example, participants described this to include lack of time, funding limitations for training academic staff and clinical educators (CE), hiring simulated patients, and inviting a guest lecturer or employing additional staff to teach PCC.

> *Whilst almost everyone in the faculty would agree… that it would be great [to invite a guest lecturer who specialises in this area] but it is now an argument against the accountants where is the money going to come from? Would it be cheaper to have it done in-house?* (Participant 4, male)

Additionally, participants detailed varying degrees of flexibility to implement change in the university, with timetabling constraints being a major barrier to incorporating PCC teaching into the curriculum. Some audiology programs were strongly tied with faculty-based programs, and therefore the audiology department, which is typically small, has little control over the timetabling and flexibility of subjects.

As a means to overcome timetabling constraints and expand the audiology curriculum, several participants proposed to adopt the American model of a four-year AuD program. In addition, a review of the graduate year internship was suggested to incorporate more educational components to address communication skills.

> *There is a lot of discussion around whether we considered the American path and go towards the Doctor of Audiology... [and] have a closer look at the clinical internship run by Audiology Australia… [and] build more formal educational components to that internship.* (Participant 6, male)

Organisational factors in hearing clinics

Clinical placements in hearing clinics play a key role in both student learning and satisfying accreditation requirements for clinical experience. A majority of participants stressed the difficulty in offering quality clinical placements outside of the university. For example, participants reported the impact of variations in hearing clinics, and CEs' work culture and patient-centred values had on students' overall clinical learning of PCC.

> *[We'd] like to pick and choose our clinical placements for the students based on the knowledge that they're great CEs, they're good clinics… but supply and demand means we don't always get [to choose].* (Participant 6, male)

Participants acknowledged that organisational pressures imposed on CEs can limit a clinician's ability to role-model and promote PCC to students, but also hinder students' practical experiences. Commonly reported pressures include restricted appointment times and fulfilling work protocols.

> *I hear a lot about, "We can't be patient-centred, because there's not enough time... We're not here to run counselling sessions, we're here to fit a hearing aid" or "here we've got a lot of tasks to do"* (Participant 1, female)

Additionally, several participants raised concerns over the commercialisation of hearing clinics and the emphasis on hearing aid sales. Participants reported concerns that this devalues the importance of rapport building and other PCC skills.

> *When we send our students out to… certain organizations that are focused on selling… [clinicians are] given scripts [on]… the way that you talk to your client about the different levels of technology and this is how you get them to buy a hearing aid. That doesn't value communication at all.* (Participant 9, female)

Misalignment between theory and clinical practice

Further to the difference in patient-clinician communication priorities from the two aforementioned categories, participants observed that what students are taught does not always equate to clinical practice. Greater misalignment was perceived in external clinical placements compared with in-house university clinical placements. This once again reinforces the asymmetry in students' skills and is considered a barrier to students' learning.

> *[We're] asking the students to [perform clinical procedures] in that way, but if they're not allowed to do it in clinic, they're being told, "Oh, you don't do things like that", that's going to be a barrier.* (Participant 1, female)

To build a stronger alignment between teaching and clinical placements, participants suggested better communication between the university and hearing clinics. This included providing clearer guidelines on student competencies at various stages of the program and receiving feedback from CEs on students' clinical performance.

> *[There's no] direct relationship between… what's being taught and how the students are actually going [in their clinical placements], so trying to strengthen that link would be wonderful.* (Participant 5, female)

4.5.3. Theme Three: Knowledge and Understanding of PCC

One's own knowledge of PCC was reported to significantly influence teaching and learning processes. This theme encapsulates participants' understanding of PCC, their reflections on teaching resources and assessments, and on the training of educators.

Uncertainty in defining PCC

Many participants expressed a degree of uncertainty towards a concrete definition of 'PCC in audiology'. However, they articulated their understanding through a description of the communication goals, values and roles during a clinical encounter, as well as the associated communication tasks and processes. Table 4.2 provides a summary of participants'

perspectives of the role each patient and clinician plays, together with the patient-clinician interaction to formulate a patient-centred encounter.

Table 4. 2: Participants' perspectives of PCC in audiology

Communication Goals, Values and Roles		
Patient	**Patient-Clinician Interaction**	**Clinician**
Patient as the center	Power balance	Holistic approach to care
Patient as expert	Information exchange	Individualised care
Active participants	Mutual understanding	Patient empowerment
Patient narrative	Shared decision-making	Patient enablement
		Self-awareness

Communication Tasks and Processes	
Patient	**Clinician**
Setting the agenda	Use closed- and open-ended questions
Communicate perspectives and experiences	Active listening
Tell their story	Address patient needs
	Show respect
	Obtain informed consent
	Show empathy
	Address patient's emotions
	Show interest
	Read patient cues

Teaching resources and assessments

Several participants mentioned the emergence of evidence-based literature and resources on PCC in audiology, and its impact on their ability to educate students. The presence of greater empirical evidence for the importance of PCC in audiology, and the accessibility and quality online resources (e.g. http://idainstitute.com) reportedly enabled greater integration of PCC into various teaching modes (e.g. lectures and workshops).

> *[There is a] renewed focus in the literature on interaction with patients and how important that is. Whereas in the past, there's been a bigger focus on technology for a long time. I think that comes through to the students in the lecture series.* (Participant 4, male)

According to participants, greater access to resources did not directly translate into participants' ability to create assessment tasks that effectively evaluate students' competency in PCC. One participant described the challenge of creating an assessment rubric that captures the student-patient interaction as the skills are considered less objective than correct testing technique or correct results.

> *To develop a rubric that would stand a challenge from a student… I would put that as another barrier. [Translating] our value for patient-centred care and… those higher skills… into qualitative marking rubrics [is difficult].* (Participant 6, male)

Participants believed that teaching PCC was a complex and somewhat subjective area. That is, participants acknowledged the complexities of the patient-clinician interaction and associated skills. This led some participants to propose the need for an audiology communication teaching framework to ensure consistency across programs in teaching and assessment. In addition, experiential teaching methods, such as standardised patients to simulate complex clinical scenarios, were suggested to build on students' practical experience.

Training academics and CEs

Participants described educators' (academic and CE) understanding of PCC as influential on the transference of knowledge to students; however, participants recognised that most educators are not trained to teach PCC skills, nor are they familiar with the patient-centred care literature. One participant explained that a deep level of understanding is required to skilfully dissect communication components. Therefore, the lack of training was not only a perceived barrier to the quality of PCC teaching but also to the provision of feedback on students' clinical performance during placements.

> *As a general rule, we as clinicians don't have a high level of understanding of communication… [and so] the quality of the feedback on patient-centred communication is not the same as the technical feedback students get.* (Participant 5, female)

To strengthen the quality of PCC teaching, several participants suggested up-skilling educators including themselves with current research into PCC education. This would help academic staff to integrate components of PCC into the course material, and CEs to reinforce its importance during clinical placements. Despite this, a familiar barrier was reported by participants in that they feel limited by university resources, such as allocated time that is dedicated to professional teaching training.

> *I would certainly agree that whilst I try to keep up with the literature on patient-centred care… I could do with up-skilling in the area… Block out some time… I could bring myself truly back up to speed with the latest research in the area but [it is a] resource question."* (Participant 6, male)

4.5.4. Theme Four: Individual Factors

In addition to the higher-level influences described in themes one and two, participants reported that individual-level factors could act as barriers and facilitators to PCC education. Specifically, participants explored the impact of student and educator factors such as: an individual's perceived 'natural' communication skills; English proficiency; and experience interacting with people, on PCC learning.

Natural communication skills

Participants reported a belief that the teaching and learning success of PCC was influenced by CE or students' 'natural' communication or 'people' skills. For instance, CEs with natural communication skills are likely to role-model more patient-centred patient-clinician communication and identify communication components to facilitate students' learning. Similarly, participants reported students with natural communication skills are better at establishing rapport with patients compared to students with poor natural communication skills.

> *I think communication style is, to some extent, inherent... Some students are more natural and at ease in communicating with people than others. A student with great communication skills is naturally comfortable… with people.* (Participant 8, female)

Conversely, participants reported students with poorer natural communication skills often adopted a formulaic approach to patient interaction. Consequently, these students were described as having a tendency to miss patient cues and be inflexible in their interactions with patients.

> *[Students go] through a set [piece] of information without, again, seeking confirmation from the patient that they've understood or making sure that those are appropriate for that particular patient. You often see students asking about, "Do you have problems at work?" to a patient who's 90 years old or something because that's one of the questions they ask.* (Participant 4, male)

Experience interacting with people

Participants perceived students' life experiences as a significant facilitator to PCC. For instance, students' prior work experiences, either paid or voluntary, provided opportunities to cultivate self-awareness and reflective listening skills. For this reason, participants described mature-aged students as better communicators than younger students with fewer life experiences dealing with people.

> *All those difficult scenarios like patients who are upset… patients who are angry… patients who are emotionally distressed about issues; they are all awkward situations that most people find difficult... The more life experience you've had, the more self-awareness you've had, and the more individual experience you've had… [will help you better] at managing that when you had that happen to you before.* (Participant 8, female)

Additionally, participants described students with a therapy education background (e.g. speech pathology) as better communicators due to their patient interaction experiences when compared to students with a technical background.

4.6. Discussion

To the best of our knowledge, this is the first study to explore the perceived barriers and facilitators to teaching and learning of PCC in Australian audiology programs. Analysis of interviews with key teaching staff and program coordinators confirmed that PCC education was beginning to gain a place in audiology curricula. However, the findings reveal a tension between competing agendas of some of the stakeholders in audiology education and clinical

placements. These agendas influence how students' PCC skills can be fostered through feedback and modelling in the clinical setting, as well as given prominence in the curriculum. Several of the findings, including the perception that students' communication skills deteriorate once they are in clinical settings, and educators' concerns about their own skill levels resonate with findings in medical education, where PCC has been in place for decades. These aspects are discussed below.

Participants described the culture of the audiology profession as biomedically-driven, where technical skills were given priority in curriculum development and in student learning. Further, participants also reported that students PCC skills deteriorated in the clinical setting, a finding similar to studies in medical education where the acquisition of biomedical skills fostered doctor-centred attitudes and devalued patient-centredness (Haidet et al, 2002). In contrast, a recent American survey found that there were no differences in patient-centred attitudes amongst undergraduate speech and hearing sciences students across the curriculum (Dockens, Bellon-harn, & Manchaiah, 2016). This difference could be due to the different methodological approaches since the educators reported their own perspective likely based on reports rather than direct observations.

A focus on biomedical aspects in health professions education as well as in health professions' cultures has long been recognised as hindering a relational focus between health professionals and their patients (Pew-Fetzer Task Force et al., 1994). Thornquist's early work on physiotherapist-patient encounters framed as different 'worlds of knowledge' also provides explanatory power for the tension between the audiology educators' expressed desires for PCC and the biomedically driven values of the discipline (Thornquist, 1994). In her study, therapists' examination of patients was conducted within their objective, biomedical frames

of reference, facilitating 'solvable' problems in the diagnostic process. Conversely, the more subjective relationship-centred communication was peripheral and 'everyday' (Thornquist, 1994). How to reconcile this tension, and the tension between audiology educators' desire for PCC to be incorporated into their teaching and the professions' prioritising the biomedical framework, is the focus of several health professions scholarly papers: authors have pointed out that the evolving needs and demands of the profession have stimulated change in the educational curriculum (Genn, 2001; Mawn & Reece, 2000). Another approach is to draw on the existing strengths in the culture and reframing them in a way that outlines the benefits (Carroll & Quijada, 2004). For instance, the incorporation of PCC into clinical practice should not overthrow existing technical aspects, but be integrated with technical components of the clinical encounter.

The findings about contextual factors that hinder curriculum development of PCC in audiology, such as timetabling limitations, the need for staff training in PCC, financial constraints to employing simulated patients, likewise resonate with barriers reported in other health professions, for example, for emergency care communication skills (Woodward-Kron et al 2013). Participant reports of a lack of confidence in their own knowledge about teaching PCC is familiar from other disciplines' accounts of introducing communication skills, since many educators did not have the training themselves, a phenomenon Silverman refers to as "the blind leading the partially sighted" (Silverman, 2009, p.365). A further contextual aspect was a perceived mismatch between the curriculum goals and how communication was role-modelled by CEs in hearing clinics. Such a 'theory-practice gap', where the authenticity of academic teaching does not always equate to real-life clinical environments (Newton et al., 2009), can be pronounced when communication skills curricula are only a focus in pre-clinical

teaching. One way to address some of these contextual issues is to develop an integrated approach to communication skills teaching that spans both the pre-clinical and clinical settings (Silverman, 2009). A rationale for an integrated and vertical communication skills curriculum is that it would shift communication skills teaching from the periphery to the 'mainstream' (Silverman, 2009); however, as Silverman points out, it is a process requiring ongoing investment, consultation with stakeholders, and time.

Participants in this study expressed a desire for a unified teaching framework to ensure teaching and assessments are consistent across audiology programs. Ng (2013) argues that the relatively young discipline of audiology should look towards scholarly developments in other health professions education to inform future developments. In communication skills teaching in medicine, for example, there is a tradition of developing consensus statements to guide communication curriculum content (e.g. Makoul, 2001; von Fragstein et al, 2008). The consensus approach provides a way of fostering discussion and a reference point; existing consensus statements from medicine could also inform a discussion on whether there is a need for a profession-specific consensus statement for audiology. Similarly, audiology educators could consider existing generic communication competencies for health professions (e.g. Denniston, Molloy, Nestel, Woodward-Kron, & Keating, 2017), and consider debates on whether the competency approach is fitting to assess communication skills (e.g. Benbassat & Baumal, 2009). Furthermore, communication teaching may require a shift away from the traditional focus on protocols and checklists towards a more reflective and dynamic approach.

The finding about educator perspectives on individual factors such as CE or students' 'natural communication skills' resonates with existing debates about conceptual approaches to teaching and learning communication skills in other health professions. One argument

opposed to the reduction of the complexities of communication to itemised and assessable 'skills' sees communication as a creative and subjective process, whereby a confined set of rules can hinder genuine patient rapport building (Salmon & Young, 2011). In contrast, there is a body of literature that argues communication can be divided into skill sets that can be taught and acquired (Kurtz, Silverman, Benson, & Draper, 2003; von Fragstein et al, 2008). It is also supported by studies demonstrating that communication skills can be improved with training (Fallowfield, Jenkins, Farewell, & Solis-Trapala, 2003; Yedidia et al, 2003). These potentially divergent perspectives need to be acknowledged in professional development sessions on communication skills teaching so that audiology educators can be part of existing debates in health professions education. Further, these perspectives warrant discussion in the context of selection processes so that tacit understandings of the purpose of selection interviews in relation to student communication can be examined.

4.6.1. Limitations

This study has three main limitations. Firstly, the perspectives of program coordinators and key teaching staff are likely to reflect the perspectives of clinical supervisors since university academics rarely have opportunities to observe student-patient interactions. The second related limitation is that CE and students were excluded from this study on the basis that they were not directly involved with curriculum decision and teaching content. Therefore, the findings only reflect the perspectives of one group of stakeholders about teaching and learning. Third, the study was based on an Australian educational context; differing educational contexts and clinical settings may limit the applicability of the findings to audiology programs

internationally. As research into PCC in audiology education is still limited, further studies are clearly needed to build a more comprehensive understanding.

4.7. Conclusion

The findings in this study help to shed light on the issues in and opportunities for successfully incorporating PCC into the audiology curriculum. The findings and discussion have highlighted the competing agendas and inherent tensions in implementing, modelling, providing feedback, and assessing patient-centred clinical communication in audiology education both in the university and on clinical placements. The findings resonate across many dimensions with the body of existing literature on PCC and clinical communication in other health professions education. While much can be learnt from the trajectories of other health professions in teaching and learning PCC in audiology, more research is needed to address the unique context of PCC in audiology to better inform curriculum content and teaching methodologies that address the needs of a range of stakeholders, including students and patients.

4.8. Acknowledgements

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4.9. Declaration of interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of this article.

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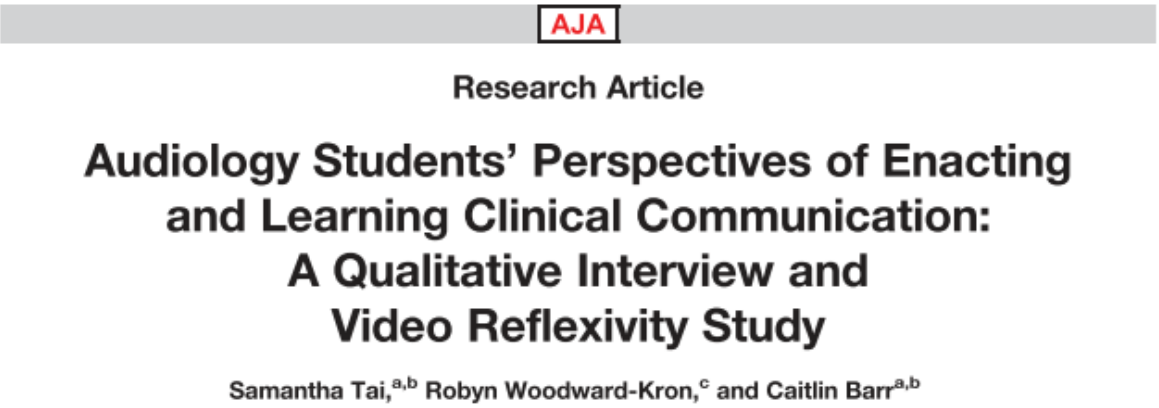
Chapter 5.

Students' Perspectives into Learning Communication Skills

5.1 Introduction

This chapter presents the findings of students' perspectives into learning clinical communication skills. The study includes the submitted manuscript including references and journal specific headings. This manuscript was submitted to the American Journal of Audiology and accepted on the 14th January 2018.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Research Article

Audiology Students' Perspectives of Enacting and Learning Clinical Communication: A Qualitative Interview and Video Reflexivity Study

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Tai, S., Woodward-kron, R., & Barr, C. (2018). Audiology Students' Perspectives of Enacting and Learning Clinical Communication: A Qualitative Interview and Video Reflexivity Study. *American Journal of Audiology*, 27(2), 219-230.

5.2. Abstract

Purpose:

Effective clinical communication is pivotal to the provision of quality hearing healthcare. To date, audiology students reportedly feel ill-prepared when counseling patients about their hearing impairment, yet there is a paucity of studies exploring how clinical communication is taught and learned in audiology programs. Thus, the aims of the study were: i) to explore final year audiology students' perspectives of their own clinical communication skills during an in-house university clinical placement; and ii) to explore students' perceptions of their clinical communication education.

Method:

Using a qualitative description approach, students were asked to co-view their filmed clinical encounter using video-reflexivity during a semi-structured interview on clinical communication education. Fifteen final year graduate audiology students from The University of Melbourne, Australia, participated in the study. The interviews were audio-recorded and analyzed thematically.

Results:

The overarching themes of *striving to be patient-centered*, *assessment shapes behavior* and *power relations* emerged from students' reflection of their own clinical encounter. In addition, the theme *what students want* described the perceived teaching methods that assisted students' clinical communication practices.

Conclusions:

The findings of this study highlight the challenges that students perceived during their clinical placement as they strive to enact a patient-centered interaction. An assessment rubric that incorporates communication skills can provide greater opportunities for feedback and self-reflection. Additionally, clinical communication education that adopts experiential learning and is longitudinally integrated into the curriculum can further reinforce students' communication learning needs.

5.3. Introduction

Effective clinical communication is recognized as an essential component of quality, patient-centered health care. Patient-centered care has been described in medicine as a holistic approach to care that includes patient's psychosocial perspectives, individualized care and equality in power relations, going beyond the biomedical aspects (Mead & Bower, 2000). This definition resonates with the operationalized model for patient-centered care in adult audiological rehabilitation, where a therapeutic relationship is built upon through individualized care where patients are informed and involved (Grenness et al., 2014a). As the scope of audiology practice expands, patient-centered care is beginning to gain a place in the discipline as reflected in contemporary audiology society guidelines (BSA, 2016; AudA, 2014; ASHA, 2004). This development has prepared the groundwork for incorporating clinical communication education into the audiology curriculum (English & Weist, 2005; Millar, Harrow, & Morgan, 2010).

In a number of health professions, a patient-centered approach to communication is a foundational component of quality patient interactions, for instance, in medicine (von Fragstein et al., 2008), in physiotherapy (Parry & Brown, 2009a; Robyn Woodward-Kron et al., 2012), and nursing (O'Hagan et al., 2014). These health professions have articulated the components of patient-centered communication that have since informed the content of communication curricula (de Haes & Bensing, 2009; Epstein & Street, 2007; Parry & Brown, 2009). In hearing rehabilitation, patient-centered communication is promoted in a number of studies as the basis for fostering a therapeutic relationship that can influence patients' perceived quality of service and rehabilitation outcomes (Laplante-Lévesque, Hickson, & Worrall, 2010; Poost-Foroosh, Jennings, Shaw, Meston, & Cheesman, 2011). The key components of patient-centered communication can be delineated into: building a therapeutic relationship (Grenness et al., 2014a, 2015a), information exchange (Grenness et al., 2014, 2015a; Poost-Foroosh, Jennings, & Cheesman, 2015), shared decision-making (Grenness et al., 2014; Grenness, Hickson, Laplante-Lévesque, Meyer, & Davidson, 2015b; Laplante-Lévesque, Hickson, & Worrall, 2012; Poost-Foroosh et al., 2015; Preminger, Oxenbøll, Barnett, Jensen, & Laplante-Lévesque, 2015), and addressing patients' psychosocial concerns (Ekberg et al., 2014; Grenness et al., 2015b). The cited studies provide a body of work that can inform the elements of audiology communication curricula.

Despite emerging evidence to support patient-centered communication in audiological practices, there is sparse research on clinical communication education in audiology programs, including whether a patient-centered approach is adopted, the quality of student-patient communication, and on the effectiveness and scope of communication curricula. What is published on communication curricula in audiology tends to describe communication in terms

of 'counseling'. That is, unlike professional counselors and psychologists, audiologists predominately provide informational counseling concerning the hearing impairment, and personal adjustment counseling to support patients' psychological and emotional response related to the hearing impairment (English, Rojeski, & Branham, 2000; Watermeyer, Kanji, & Cohen, 2012). In the Doctorate of Audiology (AuD) programs, these counseling aspects are increasingly evident in the curriculum (English & Weist, 2005); The transition from Masters to Doctorate of Audiology (AuD) in America has seen an increase in experiential teaching of communication (Dinsmore et al., 2013; Picou & Tharpe, 2015; Stiles, 2013). In particular, the use of standardized and simulated patients is beginning to gain a place in audiology teaching, which has been regarded as an engaging method to teach students communication skills in the medical education literature (Naeve-Velguth et al., 2013; Silverman, 2009). Nevertheless, there is sparse published research into students' experiences and perspectives on learning and enacting clinical communication.

Of the small number of studies that have evaluated audiology students' communication, all were conducted in AuD programs and generally reported positive results regarding the implementation of specific clinical communication modules. For example, a survey study of 29 AuD students who participated in a simulated module on breaking difficult news to parents whose infant had a hearing loss, over 70% of students strongly agreed the module was beneficial in aiding their clinical communication learning (Naeve-Velguth et al., 2013). This research suggests that audiology students see value in investing in their clinical communication development, but it provides little insight into the mechanics of students' learning.

In spite of the reported benefits of clinical communication education, researchers also report that AuD students are uncomfortable counseling patients on their hearing impairment (Alanazi

et al., 2017; English & Zoladkiewicz, 2005). In a recent study, Alanazi and colleagues (2017) explored AuD students' reflection of their own performance during three simulated infant hearing screen and counseling case scenarios. Video recordings of the simulated interaction were played back to students during the debrief interview. Qualitative content analysis of the interview revealed *lack of preparation* as the main theme in which students reported a deficit in counseling knowledge and practical experience. The authors speculated that this was a contributing factor in students' lack of self-confidence and display of negative emotions towards the simulation exercise (Alanazi et al., 2017). These findings reinforce the need to explore the adequacy of clinical communication training in current audiology programs, particularly whether the content and teaching methodology are suited to students' learning needs and learning objectives.

Students' clinical placements in hearing clinics form an invaluable part of clinical communication skills learning, yet studies on clinical communication have predominantly focused on communication interventions in a simulated environment (e.g. Alanazi et al., 2017; Naeve-Velguth et al., 2013). As with other healthcare education, clinical placements serve to provide students with direct patient interaction, opportunities to translate theoretical knowledge into practice and nurture professional attitudes (Newton et al., 2009; Rodger et al., 2008; Whitelaw, 2012). A greater focus is needed on the challenges that students' perceive in communicating with patients, including the teaching and learning in supervised clinical placements.

Educational learning theories can provide insights into learning opportunities for students in clinical settings as well as guidance on how curriculum content can be integrated throughout the curriculum to build on clinical skills. Across various healthcare education, constructivist

learning theory (Aliakbari, Parvin, Heidari, & Haghani, 2015; Brandon & All, 2010), social cognitive theory (Aliakbari et al., 2015; Bandura, 1986; Bastable, Gramet, Jacobs, & Sopczyk, 2010), and situated learning (Bastable et al., 2010; Rogoff, Matusov, & White, 1996) are examples of theoretical approaches that carry implications for workplace learning in a clinical setting. For instance, the concept of constructivist learning theory is that learning should be an active process whereby new information is constructed from the environment based on students' pre-existing knowledge and experiences (Brandon & All, 2010; Narayan, Rodriguez, Araujo, Shaqlaih, & Moss, 2013). The multifaceted nature of learning is highlighted in the principles of social cognitive theory in which learning is constructed through a continuous interaction between student factors, the clinical tasks, and the setting of the learning environment (Bandura, 1986). Students' participation in a clinical setting in situated learning can cultivate professional values and roles that are pertinent to a particular community (Kaufman & Mann, 2007; Ranmuthugala et al., 2011). Students' perceptions of their learning in a clinical setting can shed light on their opportunities for feedback on their performance, self-reflection on their learning and performance, and readiness for life-long learning.

Of particular relevance for communication skills development in audiology education are theories that can shed light on enhancing learning opportunities for students in the clinical setting. The move towards workplace-based assessment in medicine, for example, was partly in recognition that trainees were seldom observed by their supervisors during clinical practice (Norcini & Burch, 2007). Formative assessment is a cornerstone of workplace-based assessment since it aims to provide opportunities for feedback and reflection, and the assessment can be tailored to the needs of the learner (Norcini & Burch, 2007). Guidelines for formative assessment have been developed, many of which incorporate reference to

communication skills (Norcini & Burch, 2007). Further, self-reflection on behalf of the learner can foster the student's development. In a study on novices' development in audiology, Ng and colleagues (2012) noted that supervisors can enhance students' development through dialogic reflection and modeling of desirable behaviors.

While clinical communication skills teaching is still developing in audiology, there is a wealth of literature in other health professions which offer parallels in learning objectives that can inform the future development of patient-centered teaching in audiology (Tharpe, Rassi, & Biswas, 1995). However, research is needed on the challenges and opportunities in the audiology context, including the teaching and feedback opportunities afforded by supervised clinical placements. Therefore, the aims of the study were: i) to explore audiology students' perception of their clinical communication skills during a university-based clinical placement, and ii) to explore their perspectives of learning clinical communication in the audiology program.

5.4. Methodology

The study used a qualitative description approach to explore audiology students' perspectives of their clinical communication performance and their perspectives on clinical communication teaching (Sandelowski & Sandelowski, 2000).

5.4.1. Recruitment and Participants

All final year audiology students in the 2016 cohort (n = 31) from The University of Melbourne (UoM), Australia, were invited to participate in the study. The first author (ST) provided an information session and handouts outlining the details of the study at the start of a scheduled lecture, of which approximately 25 students from the cohort were present. The supervising clinical educators (n = 3) and adult patients (≥18 years old; n = 18) who had a scheduled appointment with the participating student were also invited by the first author (ST) to take part in the study prior to the commencement of the clinic. All participants provided written consent to the video-recording. Of the 18 students who participated in the study, three students were excluded due to patient non-consent, appointment format (e.g. not adult hearing assessment) or the patient canceling at short notice. A total of 15 students participated in the study (see Table 5.1 for student characteristics).

Table 5. 1: Characteristics of student participants (n = 15)

Characteristic	*Number of participants (n)*
Gender	
Female	13
Male	2
Undergraduate course	
Bachelor of Science	6
Bachelor of Biomedicine	4
Bachelor of Arts and Science	1
Bachelor of Arts	2
Bachelor of Health Science	1
Bachelor of Behavioural Neuroscience	1
Age range (years)	
Average	24
Range	22 – 28
Primary language (language spoken at home)	
English	13
Chinese	1
Vietnamese	1
Race or ethnicity	
Anglo-Australian	9
Chinese-Australian	2
Sri Lankan-Australian	1
Vietnamese-Australian	1
Italian-Irish-Australian	1
Average clinical placement (hours)	
Adult	118.6
Pediatric	82.9
Previous communication skills training	
Work-related	4
Undergraduate course	2
None	9

5.4.2. Teaching Context

The study was conducted during students' final semester of the audiology program after they had been exposed to the majority of the Masters level course content and fulfilled over 100 hours of adult clinical placements. The theoretical basis of patient-centered care was predominately taught in the 'Hearing Devices and Rehabilitation' and 'Clinical Audiology' subjects across the two years. During the first year of the audiology program, clinical communication was taught in a series of four 3-hour interactive lectures, which included group discussions, video analysis, and role-plays.

An integral part of audiology education resides in supervised clinical placements in university-based clinics or collaborative arrangements with external clinics. The Masters of Clinical Audiology programs in Australia require students to complete a minimum of 250 hours of clinical experience over the two years to obtain a clinical audiology qualification (AudA, 2017). In the university teaching clinic, clinical educators provide feedback on students' clinical performances throughout the two-year program. In-house professional development workshops are provided to clinical educators, including strategies on giving students feedback. Formal clinical assessments took place in the student's final semester in their in-house university placements. A university-based teaching clinic was chosen as the research setting for two reasons: first, extra time is allocated to provide students with more opportunities to work independently, and second, the variability in clinical supervision is minimized compared with external placements. Additionally, general hearing assessments were chosen as the appointment type for this study as new patients are often seen in these sessions. This was to avoid patient continuity with the clinical educator to enable student independence and optimal patient interaction.

5.4.3. Procedure

Data collection was conducted between August and October 2016 in Victoria, Australia, under the ethical oversight of The University of Melbourne Behavioral and Social Sciences Human Ethics Sub-Committee (Ethics ID: 1545971). The study adhered to the principles of the Australian National Health and Medical Research Statement on Research Involving Human

Subjects. The first author (ST), who was also a clinical educator at UoM, removed herself from assessment duties in 2016 during the period of the study.

A hearing assessment appointment with an adult patient (approximately one hour in duration) was video-recorded during one of the students' university clinical placements. Guided by the methodology as described by Iedema and colleagues (Carroll, Iedema, & Kerridge, 2008; Iedema et al., 2009; Iedema, Long, Forsyth, & Lee, 2006), an initial engagement with each participating student was conducted prior to the video-recording to address any questions and to establish a good relationship with the researcher, which was essential for video-reflexivity. No later than two weeks after the recorded appointment, the student was asked to co-view his or her filmed clinical encounter with the first author (ST) as part of the semi-structured interview. The viewing of the video-recording was student-led so that discussion would center on areas that were most salient and valued by the student. While students generally identified the strengths and weaknesses in their clinical encounter, the researcher also pre-identified key incidents to further facilitate the discussion. A topic guide with probing questions was used to discuss students' perspectives of their own clinical encounter and views on clinical communication skills teaching (see Table 5.2).

Table 5. 2: Topic guide excerpts

Initial Prompts
Before I play the video-recording, what was your general perception of the clinical encounter?
Are there any particular aspects of the interaction that you would like to talk about?
Examples of probing questions during video-viewing
Can you talk through this interaction for me?
How did you feel the interaction went with this patient?
Can you give draw examples from your interaction that was consistent or inconsistent with patient-centered communication? Why?
Which aspects of the interaction were you satisfied or dissatisfied with?
Now that you have had a chance to look at the video-recording, is there anything you would have done differently?
Has your general perception of the encounter changed after viewing the appointment?
Examples of probing questions on communication skills teaching
In the audiology course, can you describe what has been taught in clinical communication?
Which aspects did you find useful or not useful?
Do you think there are areas that needed to be expanded on?
How prepared do you feel you were in your adult clinical interactions?
Is there an area that you often find challenging when communicating with patients?
To what extent do you receive feedback on your clinical communication with patients?
Can you describe or suggest ways that clinical communication can be best taught to facilitate your learning?

Video reflexivity is a powerful tool that enables participants to monitor their own behavior in situ (Iedema et al., 2006). This methodology has been used in health research to gauge the thought processes and understanding of participants' behavior (Carroll et al., 2008a; Collier, Phillips, & Iedema, 2015; Forsyth, Carroll, & Reitano, 2009; Grant & Luxford, 2009; Iedema, 2011). For this study, video reflexivity was adopted since it can aid students to accurately recall their clinical encounter and build awareness of one's behavior to assist in clinician learning. The face-to-face interviews took place on the university campus and were audio-recorded using an Apple iPod touch or iPad. The interview was then transcribed verbatim. The average duration of the interviews was 55 minutes (range 42 to 70 minutes).

5.4.4. Data Analysis

Data analysis of the semi-structured interviews was guided by the thematic analysis procedure outlined in Braun & Clarke (2006). The first stage involved familiarization with the data through repeated reading of the transcripts and noting initial ideas and meanings. Using an inductive approach, the data were then systematically coded to generate 109 individual coding schemes that represented the key features and ideas across all transcripts (Braun & Clarke, 2006; Knudsen et al., 2012). The next three stages consisted of searching, reviewing and defining themes that reflected the essence of the transcripts and meanings at the core of the dialogue. The techniques used to identify themes included seeking a repetition of areas that were most salient to the participant and adopting a comparative method to question similarities and differences across the transcripts (Ryan & Bernard, 2003). To ensure rigour was achieved, field notes were documented after each interview to record contextual details or any nonverbal data (Tong, Sainsbury, & Craig, 2007). A reflexive process was carried out throughout data collection and analysis whereby the researcher was conscious to avoid any preconceptions and experiences influence participants' responses (Ben-ari & Enosh, 2011; Mauthner & Doucet, 2003). The development of the coding book was undertaken by the first author (ST) in consultation with co-author (RWK). The coding and identification of themes were conducted by ST. The analysis was regularly reviewed by ST and RWK in face-to-face meetings. Any differing opinions with the thematic analysis were resolved through discussion and by re-consulting the data to verify the findings (Knudsen et al, 2012).

5.5. Results

Four themes emerged to address the two aims of the study. The first section of the results addresses the first aim of exploring students' perceptions of their own clinical communication. The emergent themes were *striving to be patient-centered*, *assessment shapes behavior,* and *power relations*. The second section of the results describes the theme of *what students want,* addressing the aim of exploring students' perception of learning clinical communication in the audiology program.

5.5.1. Theme One: Striving to be Patient-Centered

The desire to enact patient-centeredness during the clinical encounter was a key theme that resonated throughout students' description of their own encounter. The students described multiple aspects and interpretations of being patient-centered: for example, being respectful, friendly, and empathic towards the patient. These aspects of patient-centered communication were described in relation to the main communication tasks of the hearing assessment: the sub-theme of *eliciting patient narrative* was related to the task of obtaining the patient history; the sub-theme of *informing the patient* was predominately related to the hearing assessment, while *patient understanding* likewise related to the task of delivering a diagnosis and management.

Eliciting patient narrative

When students described the history phase of the appointment, an emphasis on eliciting the patient narrative about the audiological appointment was a recurrent topic during the video-reflexivity interview. Students reporting sensing patients' desire to tell their story, which allowed a patient's main concerns to emerge, and provides opportunities for deeper exploration.

> *She seems happy to tell her story. I'm trying to watch her… and [showing interest] in what she's saying… I didn't sever off anything in the way of a possible explanation… [I] sort of validate the way she was feeling and… go a bit further in the exploration of concern. (Student 3)*

Students highlighted the use of communicative strategies such as open-ended questions, not interrupting the patient, and active listening. These strategies were only reported in relation to the case history phase.

Informing the patient

Nearly all of the students described the importance of keeping their patients informed throughout the appointment, particularly during the testing phase. Students were aware that guidance from their clinical educators and the need for additional time to carry out assessments could generate unwanted pauses in the appointment. Hence, several students made a conscious effort to keep the patient informed and involved throughout the assessment phase, such as during equipment setup or swapping the test ear.

> *I feel like informing them [because] …it really brings them into the appointment and makes it feel like we're doing these tests together, rather than me testing you and you just being my little guinea pig. (Student 2).*

Ensuring patient understanding

Students described patient understanding as a key focus in the diagnosis and management phase of the clinical encounter. This often occurred in conjunction with ensuring the patient was informed of their results and involved in the management. Students reported fearing that the complexity and technical jargon in the assessments could hinder patient understanding. Students also reported relying on patient cues to gauge whether further explanation was required. This was particularly the case for patients from a non-English speaking background. Students demonstrated an awareness to alter their communication to accommodate for their patients' English language skills and an effort to be patient-centered regardless of language and cultural differences.

> *I'm also trying to make sure she's understanding what I'm saying. So I'm also checking does it look like she's getting what I'm saying, or do I have to try and think of a better way to phrase that?…. I was happy with making [the patient feel] like I was listening to them, you know, the checking and the understanding… I want to make sure [the patient is] "involved" [and that] I've thought about your particular points and this is what we've come to the conclusion on. I supposed that's the individualized way. (Student 5)*

To promote patient understanding when delivering the diagnosis, students reported drawing examples from the patient's case history to ensure the explanation was meaningful and

relatable to the patient. Some students added that this helped promote trust and confidence in the student's recommendations.

> *[The patient] brought those concerns in… So in order to give her feedback, [you need] to tap into those particular issues [and]… give her a greater sense of what was going on and… [make] her feel like she was informed and involved. It would have been individualized [or] tailored to what it was that she had brought in. (Student 3)*

5.5.2. Theme Two: Assessment Shapes Behavior

In this theme, students acknowledged that knowing their clinical placement was assessed was likely to influence their clinical behavior. The two sub-themes include being (excessively) thorough and reverting to a biomedical approach as a means of meeting the marking criteria.

Being thorough

Students reported an underlying concern for not carrying out the assessment thoroughly or missing key information that could affect their grade. Some students tried to overcome this by adopting a checklist approach during case history to ensure all hearing-related aspects were covered. From the students' perspective, their self-imposed pressure to meet the marking criteria could overshadow patient-centered care. Students admitted a tendency to offer more information to demonstrate knowledge, rather than tailoring the information for the patient.

> *During the [management phase], it was more about me making sure that I had said everything that needed to be said… maybe I was trying to give information because I [was being assessed]. (Student 14)*

Whilst students generally welcome input from their clinical educators during clinical placements, under an assessment condition, any interjection was perceived as an inadequacy of meeting the assessment criteria.

> *[Because we were being assessed] I was a bit like, "Oh no, have I done something wrong? Why is [the clinical educator] talking?" (Student 9)*

Despite the fear of losing marks, on occasions where students were uncertain of their own capabilities, their supervisor was cued to help validate the appropriateness of their recommendation. This was in spite of knowing they were being assessed in order to ensure the patient received the best hearing care.

> *I didn't want [the patient] to leave not getting the right information or being confused about the way I explained something… We are a teaching clinic here, but that doesn't mean that the patient will leave not knowing his condition. He deserves 100% attention from supervisors as well, even though we are given the chance to practise. (Student 10)*

Biomedical tendencies

Further to being thorough in order to meet the marking criteria, students reported displaying biomedical tendencies during the clinical encounter. For instance, many students described their focus on completing the technical tasks can distract them from paying attention to their patient.

> *I was so busy doing the technical things that I didn't notice the patient's reaction. (Student 13)*

During complex case scenarios (such as a patient with a speech impairment), some students reported the appropriateness of using a more reductive communication style in order to complete a thorough case history.

> *I feel like I was probably asking more closed questions than I maybe usually would or should, but I guess I think that was probably the only way to address it… because he couldn't communicate back. (Student 7)*

5.5.3. Theme Three: Power Relations

The theme of power relations describes how students perceived the varying power relations between themselves and their patient to influence their clinical performance. Power relations were characterized by the sub-themes of the identity of being a student, the patient having more power, and the degree of knowledge to play a role in the power dynamic.

I'm only a student

The inferiority of being a student rather than an 'expert' clinician resonated throughout the interviews in relation to their communication with the patient. A number of students reported discomfort in driving the appointment as they perceived themselves as a helper or facilitator to the patient.

> *[The patient is] the boss and … I'm an instrument that's going to help answer a question for her. Which I like, that suited me. (Student 3)*

The underlying power imbalance was reported to negatively influence the patient's trust in the student recommendations. Students were aware that their lack of self-confidence could

contribute to patients questioning their credibility and knowledge. One contributing factor stems from being in a teaching context where the presence of the clinical educator can hinder their interaction and responsibility towards the patient.

> *I feel like I can't express myself or express the way I would do it as such because ... I'm still in a learning environment and... it's not my own clinic and they're not really my own patients. (Student 14)*

The patient has the power

Students acknowledged that their clinical communication changes depending on the patient's openness towards them, which ultimately changes the patient-student power dynamic. Patients who were warm and friendly were perceived as more trusting and receptive towards students' recommendations. As a result, students felt more comfortable exploring the bio-psychosocial aspects of the patient's hearing impairment and discussing management options. Conversely, patients who were dominant or abrupt during the interaction were portrayed as more intimidating and more difficult to establish rapport with. This was particularly the case for students who perceived themselves as timid, who tended to generate more self-doubt about their clinical capabilities.

> *As soon as I ask [the patient] something, I haven't even finished my question, she [the patient] sort of cuts in… Sometimes I want to ask the full question for her to elaborate but she's cutting in, sort of talks through [me]. (Student 13)*

Subsequently, students had a tendency to shy away from the interaction in fear of disrespecting the patient or risk sounding incompetent. The clinical educator was more likely to interject to further explore the patient's concerns.

Knowledge is power

A key contributor to students' depreciation in confidence stems from their professional knowledge relative to the patient. Students reported feeling more comfortable interacting with patients who were unfamiliar with audiology as they were more knowledgeable by comparison. Conversely, students reported being self-conscious with patients from a higher educational background as they felt judged for making potential mistakes.

> *I was a little bit intimidated because she was quite smart and it just makes you think more about what you're saying… if you stuff up, maybe she'll pick up that you stuffed up, so you have to be really careful about what you say. (Student 6)*

Students' knowledge influenced their sense of control during different phases of the clinical encounter. For instance, a majority of students felt more comfortable taking a case history than providing a diagnosis and management. Students explained not knowing the patient's hearing results or how the patient would react can generate anxiety. In particular, when students encounter complex cases or unexpected results, their lack of knowledge can impact their level of confidence.

> *I knew that the results weren't consistent with what I expected and I was like, "Oh no, I have to piece together the information… How do I give him a management plan from this?" (Student 10)*

Students perceived that the power difference was further highlighted by the way patients interact with clinical educators. That is, as the clinical educator had greater audiological knowledge, they held greater power and respect from the patient. For example, some students

noted that their patient's tone of voice and demeanor mellowed when they addressed their clinical educator as opposed to the student.

> *It feels like in this situation as much as I said most of the right stuff. [The patient] does look like she was talking more [to the clinical educator] because she realized that [the clinical educator]… was probably a bit more knowledgeable about the management. (Student 12)*

5.5.4. Theme Four: What Students Want

When students were asked to provide their perspectives on clinical communication teaching, the underlying theme of *what students want* in the program emerged. The perceived benefits or hindrances to students' clinical practice were described under three sub-themes relating to practical guidance, real-life clinical experiences and tailoring to student experience.

Practical guidance

Many students highlighted a deficit in having clear practical guidelines on *how* to handle different audiological cases and obtaining feedback on their patient communication skills during clinical placements.

In a classroom setting, students described the benefits of discussing their clinical experience and using reflective practice to prepare for different clinical scenarios, such as dealing with an angry patient. However, in addition to class discussions, students wanted practical exercises to help prepare them for clinical practice.

> *We did a lot of stuff on how to deal with emotions and how to pick them up and stuff, but I think on a practical level, we did a lot of talking about it but we didn't practise it. (Student 1)*

During clinical placements, feedback on patient interaction from clinical educators was highly valued by students, particularly when examples were drawn from the appointment to help refine students' clinical communication. Despite this, students highlighted that the degree and depth of feedback for technical skills far outweighed feedback about communication skills. While most students preferred feedback after each appointment, they were aware of the time constraints and clinical educators' discomfort with evaluating their patient interaction skills unless it was done poorly.

> *I guess it depends on how bad it is... because most supervisors don't have the guts to say to you, that's actually really not working. That could be really awkward for them so it's tough. (Student 3)*

Real-life clinical experiences

Although students wanted more practical guidance, the authenticity of the clinical scenarios and access to more clinical placements was continually emphasized by students to aid the development of clinical communication skills. Existing practical exercises such as role-plays and assessments with a simulated patient received mixed views in terms of effectiveness. Overall, the majority of students criticized the artifice of these activities. For instance, during role-play exercises, some students reported feeling self-conscious, while others felt it was difficult to get into character due to the lack of authenticity.

> *It's really hard to do [role-plays] because the person you're doing it with knows… what's going on… so I think in theory it's good but it often doesn't end up working that well because you both end up just laughing. (Student 7)*

Students consistently stressed the importance of real-life clinical experiences in preparing them for clinical practice. Ultimately, students described the most valuable method of learning clinical communication was through interacting with patients. Although students described clinical observations as beneficial in having the clinical educator role-model an interaction, the refinement of communication skills requires continual practice in identifying patient cues and to learn how interactions can unfold differently.

> *To be honest, I think the majority of what helps me in clinics is just being in clinics and finding out for yourself that people are different and respond differently to others. (Student 6)*

Tailoring to student experience

While the majority of students reported the value of incorporating clinical communication into the audiology curriculum, there were mixed views on the usefulness of the teaching material in aiding their patient interaction. Students were well aware that patient communication is an interactive process that is not only influenced by patient factors as highlighted in theme 3, but also the student's own factors (e.g. personality, life experience and self-confidence). A number of students reported the importance of teaching a variety of clinical communication strategies that can be receptive to differences in students' personality and communication style. This would help prevent the patient interaction becoming rigid or robotic towards the patient.

> *Everybody is different, and it's okay to [be] different. You being more comfortable [and] knowing what would be best for you... It could be helpful to give helpful strategies for your particular type of [personality]. (Student 5)*

Furthermore, a number of students questioned the usefulness of the clinical communication content as it did not cater to their communication aptitudes. A few students who perceived themselves as possessing intrinsic people skills explained that the clinical communication content can appear 'obvious' and less relevant to them compared with peers who were less comfortable with communication.

> *I feel like, do you have to teach this? … Things like, "Oh, it's just common curtesy to treat someone with respect. It's common curtesy to look at them." I guess some stuff I do feel like it's logic. (Student 11)*

5.6. Discussion

This study explored audiology students' perspectives of their own clinical communication with patients and their perception of the clinical communication education in the audiology program. Analysis of the student interviews unveiled the enactment of patient-centered communication was influenced by competing priorities between striving to enact patient-centered interactions, meeting the assessment requirements, and managing the power relations in the patient interaction. These themes, along with students' views on what they want in clinical communication teaching, carries opportunities to strengthen the audiology curriculum. In this section, the implications of these findings are discussed.

In a clinical encounter, students often reported their endeavor to be patient-centered. Students' self-perceived attempts to establish a therapeutic relationship, exchange information and build patient understanding demonstrated their tacit knowledge of the salient components of patient-centered care in an audiological context (Grenness et al., 2014a). The desire to facilitate a patient-centered interaction resonated with audiologists' and undergraduate audiology students' self-reported preferences for patient-centered care in recent studies (Laplante-Lévesque, Hickson, & Grenness, 2014; Manchaiah, Gomersall, Tome, Ahmadi, & Krishna, 2014; Manchaiah, Tomé, Dockens, Harn, & Ganesan, 2016). While the findings suggest that students were not naïve about patient-centered communication skills, an underlying struggle to manage competing priorities between enacting patient-centeredness and fulfilling the assessment was evident. Unlike the popular notion of 'assessment drives learning' (e.g. Wormald, Schoeman, Somasunderam, & Penn, 2009), students in this study reported that assessment on their clinical placement resulted in a greater focus on technical skills in order to satisfy the marking criteria. This raises questions about the clinical assessment rubric and the marks allocated to patient-centered communication versus technical competencies. One explanation stems from the culture of the audiology discipline, which has been described as biomedically-driven with a heavy focus placed on technical skills to diagnose the hearing impairment (Tai, Barr, & Woodward-Kron, 2018). Additionally, the notion of the hidden curriculum in the assessment and clinical setting (Hafferty, 1998) may encourage a biomedical focus that hinders students' strive to deliver patient-centered communication. To promote patient-centered communication skills requires careful review of the teaching and learning factors. The concept of 'constructive alignment' by Biggs (1996) may be an appropriate approach to explore what clinical communication learning outcomes are intended for students, and aligning the teaching and assessments as a unified system.

A core element of building a therapeutic relationship is establishing a balance in power relations where the patient and clinician share responsibility and control over the agenda of the clinical encounter (Mead & Bower, 2000; Roter, 2000). Findings in this study, however, showed a tendency for students to tip the power balance towards a 'consumerist' model of care, in which the patient displays more power and authority over the clinician (Roter, 2000). The student-patient power relation was incongruent with findings in audiological rehabilitation encounters where clinicians tended to display verbal dominance across history-taking, diagnosis and management phases of the appointment (Grenness et al., 2015a, 2015b). A rationale for the differing power relations may stem from students' identity construction, which has been shown in the medical literature to carry implications for patient care (Monrouxe, 2010). As opposed to Roter's (1997) notion of the meeting of two experts, the student-patient interaction reflects a meeting of a novice with developing knowledge and experience, and the patient who is an expert in their hearing impairment. This notion is also seen in nursing student-patient interactions. In a review by Suikkala and Leino-Kilpi (2001), the authors found that nursing students often reported having little to offer as they have yet identified themselves as a qualified clinician. Similarly, students in the current study often questioned their clinical judgment and lack of confidence in their knowledge, particularly during the diagnosis and management phase. In accordance with situated learning, students stressed the need for more clinical placements to enable greater opportunities to refine clinical skills and be immersed in a community of practice (Kaufman & Mann, 2007; Ranmuthugala et al., 2011). However, with the growing number of audiology students and regions where clinical placements may be scarce, alternative clinical educational models such as hiring simulated patients and building stronger collaborations with external clinics are vital to strengthening clinical education (Rodger et al., 2008; Wilson et al., 2010).

The role of the clinical educator also plays a key role in aiding students' professional identity formation through the provision of active learning opportunities and role-modelling of professional values (Kenny et al., 2003; Laitinen-Väänänen et al., 2007; Ng et al., 2012; Walton & Barraclough, 2013). Clinical communication learning can be said to involve an interplay between student characteristics, performing clinical tasks, and interaction with the patient and clinical educator (Bandura, 1986; Kaufman & Mann, 2007). Feedback from clinical educators is essential to aid students to self-reflect on their own limitations in order to re-orientate their learning goals and formulate their professional identity (Ng et al., 2012; Zimmerman, 2002). However, findings showed a perceived reluctance on the part of the clinical educators to provide feedback on students' communication. Literature from healthcare education shed further light on the challenges that clinical educators face in a teaching environment (e.g. managing multiple priorities) and the lack in training support (Gillespie & McFetridge, 2006; Ramani & Leinster, 2008; Warren & Denham, 2010). Thus, there are opportunities to explore frameworks from other health disciplines, such as medical education to inform guidelines for training clinical educators to mediate the development of students' clinical communication skills (Hesketh et al., 2001; Ramani & Leinster, 2008).

In addition to student and placement factors, patient characteristics were also a determinant of power relations. Students detailed changes in their communication according to the patient's openness or receptiveness towards them. For instance, patients who were perceived as authoritative or knowledgeable were described as more intimidating and difficult to establish rapport. This shared similarities with a survey study where a majority of AuD students reported hostile patient characteristics to be of concern (Naeve-Velguth et al., 2013). In such scenarios, students admitted that patient-centered communication can be difficult to enact as

they are uncertain on how to respond to patients appropriately without upsetting or offending them. This suggests that further training is needed to consolidate, refine and reinforce students' communication skills, in order for students to be better equipped in handling different patient characteristics (Alanazi et al., 2017; English & Zoladkiewicz, 2005). One approach that has been advocated in medical education is to integrate clinical communication education as a longitudinal approach that spans through the entire curriculum (Bombeke et al., 2010; Craig, 1992; van Dalen, 2013; van Weel-Baumgarten et al., 2013). However, potential barriers such as accreditation requirements, staff training, resources and support from stakeholders will need to be considered (Tai, Barr, et al., 2018).

In classroom-based teachings, students described experiential learning and teaching related to real-life scenarios as most valuable in bridging the gap to patient interaction. This resonates with literature in medical education where experiential teaching has been accepted as an effective method for communication skills education (Aspegren, 1999). Such teaching methods include class discussions, role-plays, simulated patients and reflective exercises, which in the last decade, has also been advocated in audiology education (Bosse et al., 2010; Cleland, Abe, & Rethans, 2009; Naeve-Velguth et al., 2013; Wilson et al., 2010). However, the lack of authenticity in role-plays is a common criticism that was supported by findings in this study (Rees, Sheard, & McPherson, 2004). It is important to highlight that students shared mixed views on their preferences and perceived effectiveness of different teaching methods for clinical communication. From a constructivist learning perspective, students are not blank slates when it comes to learning clinical communication (Benbassat & Baumal, 2009; Narayan et al., 2013). Students' perception of the questionable usefulness of clinical communication lectures for instance, may stem from their pre-existing beliefs, experiences, and knowledge of

communication. These findings again advocate the importance of clinical experience, as well as consideration of students' pre-existing capabilities. While it may be impossible to design a curriculum around every students' preferences and characteristics, students can be nurtured to be proactive self-regulated learners (Zimmerman, 2002). To promote life-long learning, cultivation of self-reflective practices and self-awareness towards their own clinical communication skills can cater for students' individual capabilities and different clinical scenarios (Ng et al., 2012).

5.7. Study Limitations and Future Directions

The limitations of the current study were related to the sampling from only one educational institution and that students were observed with patients during one type of interaction, namely an adult diagnostic assessment. Further studies can include a wider educational institution and reflections in different clinical scenarios to capture a wider scope of audiological care. In addition, there may have been some self-selection bias in those students who chose not to participate. That is, these may have been students who were less comfortable with their clinical communication skills. Moreover, it was not possible to report on the skill level of participants in regards to the whole cohort as a discrete score for communication skills was not available. Therefore, further studies should explore whether differences in learning needs exist between students with varying communication skills. Clinical educators play a key role in students' workplace learning and their perspectives can provide a valuable insight into the barriers in teaching clinical communication to students; therefore, their insights should be sought in a future study.

5.8. Conclusion

The findings of this study highlighted the priorities of meeting assessment requirements and managing power relations with the patient can influence the enactment of patient-centered communication. A greater emphasis on aligning the assessment rubric to reward patient-centered interactions can shape students' clinical behavior. With the scarcity of clinical placements, the findings draw attention to the importance of clinical educators in facilitating students' self-regulated learning, including the provision of feedback that focuses on students' patient interaction skills. Clinical communication is a vital aspect in any audiological interaction, further research is needed on how patient-centered communication can best be integrated into the audiology curriculum.

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The authors report no conflicts of interest. The authors alone are responsible for the content and writing of this article.

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Chapter 6.

Clinical Observations of Student-Patient Communication

6.1. Introduction

This chapter presents the findings of the final study on student-patient interactions in a supervised teaching clinic. This manuscript was accepted to the International Journal of Audiology on the 16th October 2018. This chapter includes the journal specific headings of the manuscript, the references and appendices.

Tai, S., Barr, C., & Woodward-Kron, R. (in Press). Towards patient-centred communication: An observational study of supervised audiology student-patient hearing assessments. *International Journal of Audiology*.

6.2. Abstract

Objective:

This study has two interconnected aims. The first was to better understand how audiology students co-construct hearing assessments with patients while supervised by a clinical educator. The second was to investigate how students' communication aligns with principles of patient-centred communication.

Design:

The student-patient-clinical educator hearing appointments were video-recorded and transcribed. Genre analysis, a form of discourse analysis, was carried out to identify the structure and communication patterns. The six-function model of medical communication was adopted as an analytical framework to map students' patient-centred communication.

Study Sample:

Twenty-three final year audiology students from two Australian universities participated in the study.

Results:

The generic structure of the hearing assessments were the main stages of *taking a history*, *providing a diagnosis*, and *initiating management plans*. For patient-centred communication functions, students demonstrated their ability to foster the relationship and gather information. The communication functions of decision-making, enablement and responding to patients' emotions were rarely observed. A significant relationship was found between clinical educators' interjection as a function of students' patient-centred communication tendencies.

Conclusion:

To enhance students' patient-centred communication, teaching should include explaining and planning as well as addressing additional aspects of patient-centred communication. Support of clinical educators could optimise students' communication skills learning.

6.3. Introduction

In hearing healthcare, the need for patient-centred communication (PCC) is gaining recognition as part of a holistic approach to quality care (Ekberg, Grenness, & Hickson, 2014; Grenness, Hickson, Laplante-Lévesque, & Davidson, 2014a, 2014b; Laplante-Lévesque, Hickson, & Grenness, 2014). In healthcare literature, there is substantial evidence of a positive relationship between PCC and patient outcomes (e.g. Bird & Cohen-Cole, 1990; de Haes & Bensing, 2009; Epstein & Street, 2007), and that patient-practitioner communication is based on a range of skills that can be taught and assessed (e.g. Silverman, 2009). In medical education, the content of communication curricula is informed by consensus statements, and program accreditation requirements have contributed to communication skills becoming core components of medical education (Brown, 2008; Makoul, 2001b; von Fragstein et al., 2008). In audiology education, communication teaching is less well established; however, audiologic professional bodies have become increasingly interested in ensuring that PCC is incorporated (e.g. British Society of Audiology, 2016; Audiology Australia, 2014; American Speech-Language Hearing Association, 2004).

PCC in an audiological context shares similar generic communication functions with other health professions, such as fostering a therapeutic relationship (Grenness et al., 2014a), information exchange (Grenness et al., 2014a; Poost-Foroosh et al., 2015), shared decision-making (Laplante-Lévesque, Hickson, & Worrall, 2010; Poost-Foroosh, Jennings, Shaw, Meston, & Cheesman, 2011), and responding to patients' psychosocial concerns (Ekberg et al., 2014). Despite the evidence supporting the need for PCC, observational studies found that PCC was rarely adopted. For instance, during history-taking, clinicians tended towards directive and biomedically-focused information gathering which hindered elicitation of patients' perspectives (Grenness et al., 2015a). In addition, during diagnosis and management planning, patients were rarely involved in decision-

making processes (Grenness et al., 2015b). These studies were conducted with practising audiologists rather than students, but years of experience was not found to be significantly related to the nature of communication.

Outside audiology, it is well recognised that tertiary education contributes to the acquisition of PCC (Smith et al., 2007; van Weel-Baumgarten et al., 2013; Yedidia et al., 2003). In a recent Australian study, course coordinators across all audiology programs were interviewed regarding their perceived barriers and facilitators to PCC education (Tai, Barr, & Woodward-Kron, 2018). Findings showed that despite academic staff's motivation and awareness of students' need to improve communication skills, professional culture and university constraints such as resource limitations posed challenges to implementing PCC education.

Aside from external influences, there is a newfound interest in the teaching and learning aspects of clinical communication education. Past studies on experimental teaching methods, such as role-plays and simulated patients, have indicated that audiology students are technically competent but often feel less confident when counselling patients about their hearing impairment (Bressmann & Eriks-Brophy, 2012; Herzfeld & English, 2001; Martin, Barr, & Bernstein, 1992). This was despite of students' preference for patient-centred care and an indication of the importance of counselling skills (Manchaiah, Tomé, Dockens, Harn, & Ganesan, 2016b; Whicker et al., 2018). These findings were built on in a recent interview study using video reflexivity, in which final year audiology students were asked to co-view a recording of their own clinical placement and discuss their perspectives on the interaction (Tai, Woodward-kron, & Barr, 2018). Students reflected that their focus on technical priorities can often compromise their interaction with the patient. A contributing factor may stem from guidance from clinical educators. In a survey study, while clinical educators reported being confident in teaching AuD students counselling skills, lower self-

efficacy in explaining the rationale for counselling may hinder students' learning (Muñoz, Landon, & Corbin-Lewis, 2017).

To date, little is known about audiology student-patient interactions in a naturalistic setting. This study examined audiology student-patient interactions to gain a better understanding of how students conducted hearing assessment appointments, including investigating how students' communication aligns with the principles of PCC**.** The two aligned research questions were: i) How do audiology students co-construct the main communicative clinical tasks in a hearing assessment appointment under the supervision of a clinical educator (CE)? ii) How does students' communication align with the principles of PCC? It should be noted that the first research question examines the interaction from a macro-structural perspective, and therefore includes the patient and CE contributions. However, only the student contributions are analysed for PCC as this was the focus of the study.

6.4. Methodology

This study was conducted using an observational mixed-methods approach. Data was collected between August and October 2016 under the ethical oversight of The University of Melbourne Behavioural and Social Sciences Human Ethics Sub-Committee (Ethics ID: 1545971). The study adhered to the principles of the Australian Government's National Statement on Ethical Conduct in Human Research (NH&MRC, 2017).

6.4.1. Participants and Recruitment

All final year audiology students from two Australian universities were invited to participate in the study. Students in their final semester were chosen as they are expected to carry out appointments independently. Student recruitment occurred at information sessions about the project at which the CEs were present. Adult patients who had a scheduled appointment with the participating student were invited to participate by either the first author, a research assistant, or the clinical manager. Written informed consent was obtained from students, CEs, patients, and accompanying family members prior to or on the day of the appointment.

Thirty students (University A = 18; University B = 12) initially consented to participate in the study; however, seven students (from University A = 3; University B = 4) were subsequently excluded due to the appointment format (i.e., not adult hearing assessment), patient withdrawal or appointment cancellation. A total of 23 students participated in the study (see Table 6.1 for student demographic characteristics).

Table 6. 1: Summary of participant and consultation characteristics

Participant	Characteristic	
Students (n = 23)	Gender	
	Female	19
	Male	4
	University	
	University A	15
	University B	8
	Age (years)	
	Range	22 – 41
	Primary language (language spoken at home)	
	English	19
	Other (Chinese, Korean, Vietnamese)	4
	Race or ethnicity	
	Anglo-Australian	14
	Australian-Chinese	4
	Other (Australian-Sri Lankan, Vietnamese, Chinese, Greek, Korean)	5
	Average clinical placement (hrs) to date	
	Adult	131
Patients (n = 22)	Gender	
	Female	10
	Male	12
	University	
	University A	15
	University B	7
	Average length of consultations (min:sec)	
	Total length	52:51 (39:36 to 73:26)
	Length of history taking	7:34 (2:39 to 16:39)
	Length of assessment	37:41 (21:07 to 51:11)
	Length of diagnosis and management	7:44 (2:37 to 12:31)
	Main reason for appointment	
	Annual hearing check	5
	Middle ear issue	5
	Tinnitus	4
	Possible hearing change (e.g. difficulty hearing in noise)	6
	Other	2

The supervising CEs (University A = 3; University B = 5), adult patients (≥18 years old; n = 22) and accompanying family member (≥18 years old; n = 1) who had a scheduled appointment with the participating student were also participants in the study and also provided written consent.

6.4.2. Study Setting and Procedure

This study was undertaken at two Australian university-based audiology teaching clinics (University A, and University B). University-based clinics were chosen in contrast to community or commercial settings as students are more likely to have the opportunity to perform with greater independence (e.g. provision for longer appointments, patients aware of teaching focus). Each clinic can have either one or two students allocated. Students were supervised by CEs, who are employed to provide feedback and to oversee the clinic.

Video-recording equipment (Apple iPod touch or Canon Legria) was set up to capture the clinical interaction. The researchers were not present during the recording. Table 1 provides a summary of the 22 recorded hearing appointments and the length of each segment (history taking, assessment and diagnosis and management).

6.4.3. Data Analysis

The hearing assessment appointment was video-recorded and transcribed. The hearing test was excluded from transcription and subsequent analysis due to minimal talk between the student and patient aside from providing instructions for testing procedures.

As communication within a hearing assessment appointment was co-constructed by the student, patient, and CE, the average word count percentage was calculated to provide an overview of the student, patient, and CE verbal input. In addition, two analytical approaches were used to address the research aims: these are described below.

Genre analysis

The discourse approach, informed by genre analysis after Martin and Rose (2003), was used to identify how the student, CE, and patient co-constructed the hearing assessment appointment. Martin and Rose refer to a genre as a staged, goal-oriented social process. A genre analysis approach provides a macro-structural perspective of communicative events such as a consultation. Its focus is not an in-depth analysis of the sequential turns of the interaction, such as conversation analysis, which has been used in some audiology studies (e.g. Ekberg, Meyer, Scarinci, Grenness, & Hickson, 2014). Genre analysis considers the contextual elements of the text (e.g. participants and their roles, topic(s) of the text) and how these variables are configured through language. Genre analysis has been used in language and literacy education contexts to make visible to students the underlying structure of successful texts and the language choices. It has also been used in healthcare communication research to identify how participants contribute to the unfolding discourse and achieve their communication goals as well as the influence of the context on the language choices (Pryor & Woodward-Kron, 2014; Slade et al., 2015; Woodward-kron, 2016; Woodward-Kron & Elder, 2015). The genre analysis approach in this study was informed by Eggins and Slade (1997, p.230-235). It involved identifying predictable patterns or main stages in the interaction as well as sub-phases, then identifying and assigning functional labels for each stage to describe how it contributes to the genre. The delineation of stages and sub-phases was made by paying attention to shifts in the contextual elements such as speaker role (e.g. enquiring versus explaining), and the topic and purpose of the unfolding discourse. The first author carried out the iterative process of identifying the genre stages and discussed this with the third author (RWK). While genre analysis normally includes an analysis of the contextual variables of field (the what of the discourse), tenor (the interpersonal dimension of the discourse) and the

mode (how the field and tenor are organised in the discourse), for the purposes of this manuscript, the focus was on identifying and labelling the stages.

The Patient-Centred Analytical Framework for Audiology

We developed a framework for analysis, *The Patient-Centred Analytical Framework for Audiology*, by building on the model of de Haes and Bensing's (2009) six function model of medical communication in order to map the presence of student's PCC. The six function is de Haes and Bensing's synthesis of earlier models that underlines the communication functions that are linked to positive patient outcomes or 'endpoints' (de Haes & Bensing, 2009). These communication functions are: fostering the relationship, gathering and providing information, decision-making, enabling treatment-related behaviour and responding to emotions (de Haes & Bensing, 2009). In order to develop a robust analytical tool, we drew on the frameworks of Epstein and Street (2007) and King and Hoppe (2013) to identify the minor communication tasks or processes that contributed to realising each of the functions identified by de Haes and Bensing.

A coding schema was developed to apply the analytical framework to the interactions. Each PCC task had an assigned code (e.g. 1a, 1b etc.; see Table 6.2 and Appendix C-1 for expanded version). The codes within the analytical framework were not intended as an exhaustive presentation of PCC tasks but salient instances relevant to the student-patient audiology context.

Table 6. 2: Coding book

Six-Function Model (de Haes & Bensing, 2009)	Code	Student Patient-Centered Communication (Epstein & Street, 2007; King & Hoppe, 2013)
1. Fostering the relationship	1a	Addressing the patient appropriately e.g. introduction
	1b	Listen actively (verbal and non-verbal)
	1c	Build patient rapport e.g. informal/small talk (related and unrelated to hearing), laughter/ humour
	1d	Engage in patient understanding e.g. reassurance of symptom, agreement
2. Gathering information	2a	Elicit patients' main concerns e.g. ask open-ended questions
	2b	Allow patient to complete responses without interruptions
	2c	Encourage patient's perspectives
	2d	Explore psychosocial effects
	2e	Explore other relevant hearing-related questions. Include transitions to avoid *check-listing*
	2f	Clarify and summarise information
	2g	Transitions to other questions e.g. signposting
	2h	Invite the patient to provide further information
3. Providing information	3a	Keep the patient informed e.g. provide an outline of appointment, rationale for certain questions etc.
	3b	Ask the patient about their information needs
	3c	Explain nature of diagnosis in relation to patient concerns
	3d	Outline recommendations
	3e	Avoid jargon and complexity e.g. use everyday language, consider health literacy
	3f	Encourage questions and check understanding
	3g	Emphasise key messages e.g. repetition & summarise
	3h	Provide patient education where appropriate
4. Decision-making	4a	Encourage patient participation in decision-making
	4b	Outline options, including pros and cons
	4c	Explore patient's preferences and understanding
	4d	Discuss uncertainty
5. Enabling treatment-related behaviour	5a	Assess patients' readiness to change health behaviours
	5b	Outline steps or processes involved with treatment recommendations
	5c	Identify and enlist resources and support
	5d	Discuss follow-up and plan for unexpected outcomes where appropriate
6. Responding to emotions	6a	Notice clues and acknowledge patients' emotions
	6b	Explore emotions e.g. legitimation, validation
	6c	Express empathy e.g. naming, understanding, respecting, supporting, exploring etc.
	6d	Provide help in dealing with emotions if appropriate

Adopted from de Haes and Bensing (2009), and Modified using King and Hoppe (2013); Epstein and Street (2007)

The coding schema was piloted with all authors independently applying the codes to three transcripts of differing patient presentations. Over a series of meetings, the coded transcripts were compared. Discrepancies in the analysis were discussed and modifications were made to match the audiological context. Once the analytical framework was agreed upon, the first author carried out the coding for the rest of the transcripts. After coding each transcript, the video recording was reviewed to ensure the coding resonated with non-verbal and intonation cues such as eye-contact, body language, proximity, facial expressions and voice pitch not captured in the transcripts. Three (13%) of the transcripts were randomly selected for double-coding by co-author (CB) for reliability.

All codes were tallied (see Appendix C-2) and a linear regression analysis was performed to investigate the relationship between students' PCC score and CEs' interjection. To compare the six functions, the percentages of each code (i.e. ticks, asterisks, and dash) were calculated. Joint-quality checks were in place throughout the analysis to ensure reliability.

6.5. Results

This section commences with an overview of the percentage of words spoken during different segments of the hearing assessment appointment. This is followed by findings from the genre analysis of the supervised student-patient hearing assessment, then the findings from the analysis of students' communication from the perspective of patient-centredness.

6.5.1. Average Percentage of Words Spoken

Figure 6.1 represents the average percentage of words spoken by the patient, student(s) and CE during the overall history taking stage, and the combined stages of providing a diagnosis, and initiating management plans (these labels are explained in the following section). The charts show that students' average percentage of words remained the same across the two stages. However, the CE's talk increased substantially in the combined stages of providing a diagnosis and initiating management plans.

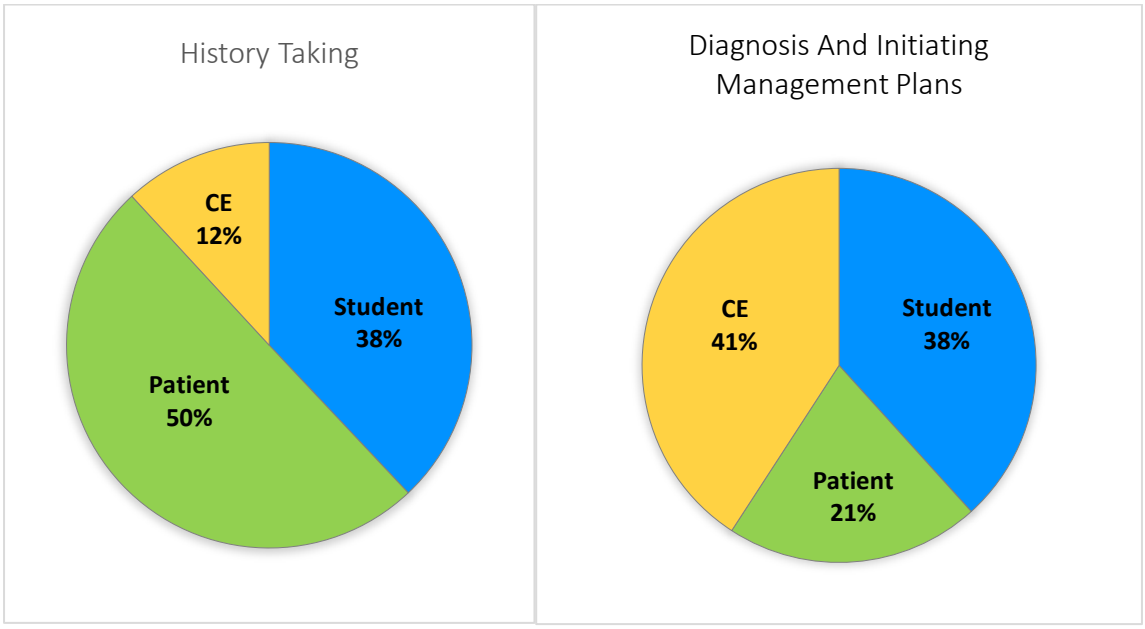

Figure 6. 1: Average percentage of words spoken by the patient, student and CE during the history taking; and providing a diagnosis and initiating management plans.

6.5.2. Communicative Clinical Tasks of a Hearing Assessment

The genre analysis showed that the three main genre stages of the hearing assessment that the students carried out were: *taking a history*; *providing a diagnosis*; and *initiating management plans* (see Table 6.3). The generic stages, sub-stages and associated communicative tasks are discussed.

Table 6. 3: Generic stages and functional descriptions in a hearing assessment appointment

	Functional description	Examples
TAKING A HISTORY		
OPENING		
Greeting	Initial engagement and to make their presence known	"Hello, nice to meet you." (S8)
Introduction	Identify people in the room and their role in the appointment	"This is my supervisor, [X]." (S1)
Reason(s) for visit	Identify patients' reason(s) for the hearing appointment	"Could you tell me a bit about why you've come in today"? (S6)
INFORMATION GATHERING		
Exploration of patient's main concern(s)	Providing information on audiological concern	P: "Actually, I've got some problem with, I think, tinnitus, in this ear… It's been, probably three weeks, I can't hear it now, but sometimes, it gets a little bit loud." (Patient of S14)
	Exploration of patient's main concerns	S: "And what does it sound like?" (S14)
	Clarification/paraphrasing of patient symptoms	"So, you've had those sinuses for the last 10 days you said?" (S14)
Exploration of other hearing-related questions	Checklist of other hearing-related questions	"Do you have a family history of hearing loss?" (S6&7)
TRANSITION TO ASSESSMENT		
*Check that history taking is complete	Invite patient to add further information	"Is there anything that I haven't asked that you would like to mention to me?" (S20)
	Check with CE that all relevant questions are covered	"That's all I need. [CE], did you have anything you wanted to add?" (S8)
Signposting to start the assessment	Segway to begin hearing assessment and subsequent explanation of results	"We're just going to do a few different tests today, and I'll explain things as I go, and then afterward we just come back and we'll discuss the results with you." (S8)
PROVIDING A DIAGNOSIS		
INFORMATION PROVISION		
Explanation of results	Explanation of hearing assessments	"We've tested a range of frequencies, so these are the really low-pitched sounds and these are the very high pitched sounds" (S18)
	Address patients' main concern and use real-life examples	"[The results] may explain why you're missing the start of the sentences, and end of sentence that you said before" (S21)
	Check patient understanding	"Did you have any questions about any of that?" (S24)
*Elaborating concerns of a diagnosis	Provide a reason for signalling concern	"The issue that I'm seeing now, is that you've got a difference between your two ears. The left is worse than your right." (S14)

MANAGEMENT PLANNING		
RECOMMENDATION		
Provision of recommendations	Offer recommendations options and processes involved	"If you are having difficulty in situations…, there are options that you can look into [such as] hearing aids." (S1)
	Check patient's receptiveness and perspectives to recommendation(s)	"So do you feel like you want to do something about [your hearing loss]?" (S12)
*Providing alternative recommendations	Offer another option if the patient is doubtful towards the initial recommendation	"It's up to you whether you want to have a chat with someone about hearing aids… there are a couple of things that you can do to help you communicate with people." (S11)
SUMMARY & REPAIR		
CE intervene	Checking patient understanding.	"Can I just jump in? [Patient], do you understand these results? Do you understand what we've said?" (CE of S8)
	Explain process (next steps)	"You can wait until after you see the ear, nose, and throat specialist to book the other test in" (CE of S20)
	Summarise results and correct any patient misunderstanding	"Given that there is a difference between the ears, it might be worthwhile doing… another test that can give us more information" (CE of S13)
	Offers explanation to patient concerns	"Sometimes you get a bit of crackling with the Eustachian tube…" (CE of S1)
CLOSING		
End appointment	Signal end of the appointment and direct patient back to the reception area	"Alright, so that's everything we need to do today. If you don't have any other questions I'll take you back out the front." (CE of S8)

* = optional stages or functions; [X] = de-identified; [P] = patient; [S] = student

Taking a History

This stage involved the student taking the patient history to formulate a diagnosis. This stage included three identifiable sub-stages of opening, gathering information, and transitioning to assessment, which typically occurred in a linear fashion. The *opening* was initiated by the student or CE who led the patient in, and it included greeting the patient and introducing him/her to the CE and/or student in the room. The opening sub-stage functioned to foster the relationship (Woodward-Kron & Elder, 2015).

The sub-stage of *Information Gathering* functioned to explore the patient's main audiological concern(s). The student gathered information relating to the presenting symptoms, such as *which* ear was affected, *when* the symptom started and *what* triggered the symptoms. Students tended to clarify and paraphrase patients' symptoms to ensure mutual understanding. To explore other hearing-related questions such as patients' history of noise exposure, family history, general health, vestibular symptoms, middle ear health and previous ear-related surgeries, students typically adopted a 'checklist' approach using closed-ended questions to gather information. Throughout this sub-stage, where students missed relevant detail, CEs tended to intervened to obtain further information and to seek clarification from the patient (e.g. *'Can I just ask… did anything happen around the time you started getting the blocked feeling?'* CE of S11). CEs also offered justifications for the questions asked where appropriate (e.g. *'The reason I ask [is] sometimes it can also affect the hearing nerve'* CE of S16).

The third sub-stage of *Transitioning to Assessment* was initiated when all relevant information had been gathered and the student was ready to commence the hearing assessment. Sometimes students invited the patient to add further information or asked whether the CE had further questions. If the CE initiated questions at this point, the previous phase/stage of information gathering was elaborated.

Providing a Diagnosis

The student's initiation of this next main stage was predominately signalled by the CE after the hearing assessment phase to give a diagnosis. Unlike the question-answer sequence of the previous stage, the student's (and CE's) goal was to provide information of assessment results (e.g. audiogram, speech recognition, tympanometry) and to relate the diagnosis to the

patient's main concerns. Clarification by the CE often occurred after students provided the diagnosis. The patient was often passive, but was invited to ask questions by the student (or CE) to check if the patient had understood the results. In cases where the diagnosis required further investigation, the optional communicative task of elaborating the significance of the diagnosis was displayed (see Table 6.3).

Management Planning

The stage of management planning follows the diagnosis and functions to outline the next steps towards the management option. Three sub-stages resided within this stage. The first sub-stage, *recommendation* continues to be dominated by either the student or CE to explain the processes involved, such as to obtain hearing devices or seek further investigations. If the CE had interjected during the provision of diagnosis, they are likely to also deliver the management planning. Patients tended to have little input into this stage. The optional sub-stage to offer an alternate recommendation was only present when the patient displayed reluctance through verbal and non-verbal cues towards the initial option.

The second sub-stage of *summary and repair* was performed by the CE and functioned to check patient understanding, ensure patients' main concern was addressed, summarised the diagnosis and the steps involved in adhering to the recommendation. This was followed by the final sub-stage of *closing,* where the CE predominately signalled the end of the appointment. The CE (or student) provided the patient with a final opportunity to ask further questions, before accompanying the patient back to reception.

6.5.3. Students' Display of PCC Skills

An overview of the presence of students' PCC according to The PCC Analytical Framework for Audiology is shown in Figure 6.2. The communication functions of fostering the relationship, gathering information, and providing information were performed by over 60% of students either fully or partially throughout the appointment. The communication functions of decision-making, enabling treatment-related behaviour, and responding to emotions were performed by less than approximately 30% of students. The communicative tasks within each function are discussed in the following section.

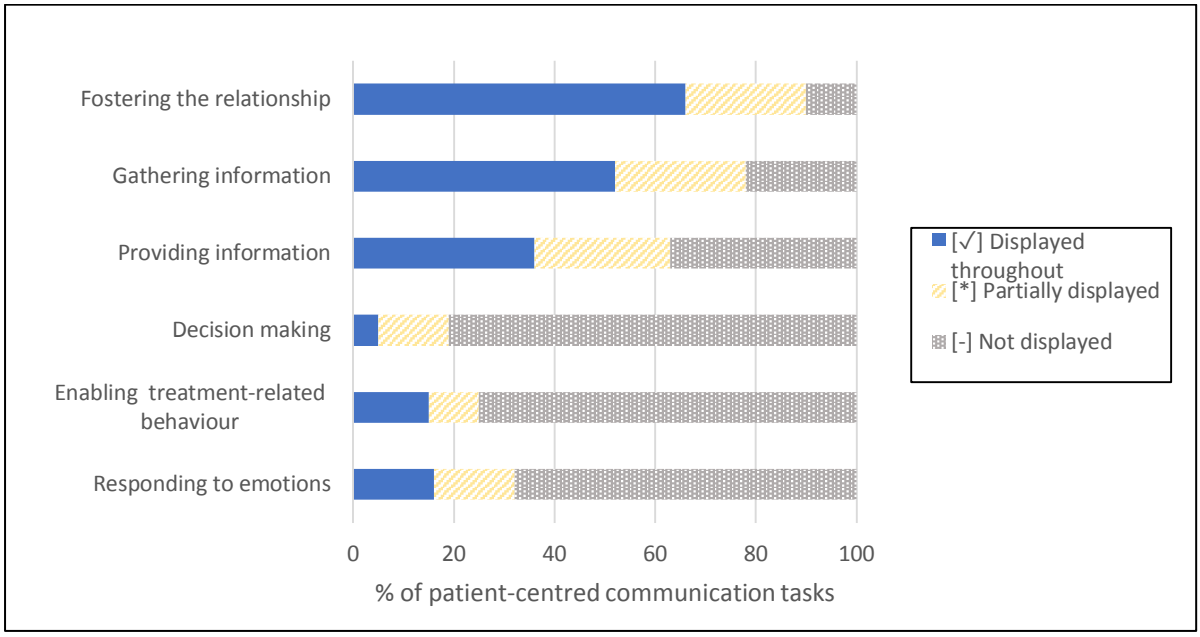

Figure 6. 2: The percentage of PCC tasks within the six functions.

Fostering the relationship

Of the six PCC functions, fostering the relationship was the most displayed function. Students were generally adept at greeting and showing active listening during the appointment. The use of agreement statements to engage in positive patient encouragement was also commonly

observed. Students also engaged in varying degrees of small talk, and used humour and colloquial language to build patient rapport.

Gathering information

Gathering information was the second most displayed function by students and resided predominantly in the history taking phase. Nearly all students elicited their patient's main concerns with an open-ended question such as *'So, what brings you in today?' (student 1),* followed by an exploration of their patient's perspectives without interruption. Throughout information gathering, students often clarified information to ensure accuracy and asked if their patient had further information to add. Although half of the students explored psychosocial effects of hearing loss to some extent, this was only partially done when it was in relation to tinnitus. All students engaged in extensive questioning of other hearing-related aspects outside of their patient's main concern and in nearly half the appointments, questioning was conducted in a checklist-like manner with no signposting or responsiveness to patient cues.

Providing information

Apart from the communicative tasks of keeping patients informed and checking patients' understanding, two-thirds of the communicative tasks within this function of providing information were either partially displayed or not displayed at all. For example, students tended to begin explanation of results by detailing technical aspects of assessments; asking for patient's information needs prior to the explanation was rarely observed. Reference to the patient's main concerns and treatment recommendations were partially observed in half of the students. While students demonstrated an awareness of the importance of checking

patients' understanding and appeared cautious not to use jargon, few students emphasised key messages or offered patient education. Overall, CEs' talk increased substantially in this function, particularly during the explanation of diagnosis, outlining recommendation and emphasising key messages.

Decision-making

Communicative tasks within the decision-making function were least observed in hearing assessment appointments. Apart from cases where hearing devices were recommended, patient participation and offering an outline of different options were rarely observed in these diagnostic cases. Exploration of patient preferences or uncertainty towards the recommended option were seldom observed.

Enabling treatment-related behaviour

Within this function, less than 20% of students enacted the enabling treatment-related behaviour communicative task either fully or partially. Aside from cases where patients were recommended hearing devices, assessing patients' readiness to change their health behaviour was considered not applicable. The CE was found to perform most communicative tasks in relation to outlining the processes of the recommended option and follow-up plans.

Responding to emotions

Overall, less than 30% of students responded to the patient's emotional concerns either fully or partially. Students who noticed their patient's emotional state tended to express empathy and offer validation either fully or partially. In all 22 cases, patients' emotional state did not require additional assistance (e.g. referral to a professional counsellor).

The relationship between students' communicative patterns and CE talk

As shown in Figure 6.1 and in the genre analysis findings, the CE's interjections were observed throughout the hearing assessment. Across the 22 cases, a strong negative linear relationship between student's PCC score and CE's talk was shown (see Appendix C-3 for scatterplot), which was confirmed with Pearson's correlation coefficient of -0.822 ($p<0.001$). That is, as students' PCC score increased, the CE's talk decreased. The R-squared value was 67.63% of the variation in students' PCC score.

6.6. Discussion

This study aimed to explore how audiology students co-construct hearing assessment appointments and to identify the communicative features of students' talk that align with PCC. Genre analysis revealed the patterns of structuring the hearing assessment to achieve the student and CE's communicative goals. The findings of distinctive strengths and weaknesses in students' PCC skills will be discussed in accordance with the genre stages.

The genre stages of taking a history, providing a diagnosis, and management planning resonate with previous findings that the health professional takes the interactional initiative to drive the unfolding of the discourse (Roberts & Sarangi, 2005; Woodward-kron, 2016). This suggests that the schematic structure of a hearing assessment appointment does not reflect the power balance relations characterised by patient-centred care. This is in contrast to findings in some general practice settings where the patient can initiate phases (Woodward-Kron, Wilson, & Gall, 2018). Noticeable was the 'repair' stage initiated by the CE to ensure the correct management plan is provided before the appointment ceases. This finding is similar to patterns

of health professional-patient interactions where less-experienced clinicians need to revisit some stages when the goal of the stage has not been achieved (Woodward-Kron & Elder, 2015).

Students' ability to foster a therapeutic relationship was the most prevalent of the six PCC functions. Many students demonstrated the communicative tasks of addressing the patient appropriately, actively listening, and engaging in patient understanding throughout the appointment. These communication tasks contributed to building trust and respect in formulating the basis of a quality clinician-patient relationship (de Haes & Bensing, 2009). Of the communicative tasks within this function, the initiation of informal talks, such as small-talk, was least adequately performed by students. For instance, students sometimes failed to notice their patient's humorous undertone, missing opportunities to establish rapport. In the nursing literature, the use of small talk and 'amusing anecdotes' are strategically used alongside medical talk to build patient rapport and ease patients' discomfort in the medical environment (Holmes & Major, 2003). A contributing factor may stem from the cognitive demand of the clinical task, which will be more taxing to a student compared with an experienced clinician who has more knowledge in their repertoire and can, therefore, also attend to social aspects (Tryssenaar & Perkins, 2001).

Similarly to the function of fostering the relationship, students generally performed gathering information adequately. This was observed during history taking, where students used open-ended questions to elicit patients' main concern and allowed patients to talk without interruption. While these behaviours are consistent with PCC and contrast with communication behaviours of experienced audiologists reported by Grenness and colleagues (2015a), students also performed information gathering related communication that did not

align with PCC. That is, students tended to ask biomedical (i.e. hearing-related questions) in a checklist approach that lacked conversational flow and transitions (e.g. signposting); they also asked few psychosocial questions, consistent with previous findings of experienced audiologists' communication (Ekberg et al., 2014; Grenness et al., 2015a). The lack of students' psychosocial information gathering and directive questioning has been attributed to the audiology professional culture being technically (i.e., biomedically) focused (Tai, Barr, et al., 2018). This theme was also present during information provision in the management planning stage where students focused on the technicality of results and in some cases overlooked the patient's main concern. These communicative tendencies, together with the use of complex terms and a lack of reinforcement on key messages can impact patient recall, understanding, and adherence to recommendations (King & Hoppe, 2013).

An important finding is the CE's influence on the student-patient interaction. As with other healthcare disciplines, the CE has a dual role of educating students and ensuring patients receive optimal care (Ramani & Leinster, 2008). The findings highlighted a trend for CEs to interject where students showed partial or absence of PCC. The CE's input increased substantially in the management planning stage and continued until the end of the appointment. An explanation may stem from the CE's supervision style or habit of interjecting to achieve efficiency of the clinic as well as upholding the responsibility of ensuring patients' hearing concerns are addressed. Other healthcare professions have indicated clinical supervision style to influence the student-CE interaction and the degree of students' participation (Fernando & Hulse-Killacky, 2005; Laitinen-Väänänen et al., 2007). The scarcity of opportunities offered to students may be associated with lower self-efficacy in CEs to facilitate students' counselling skills, which can impinge on patient engagement (Muñoz et al., 2017). Considering that the students in the study were in their final stages of the audiology program,

the degree of CE intervention demonstrates a need to strengthen communication skills education within the diagnosis and management phase. Past studies within the discipline have demonstrated communication training using case scenarios such as breaking difficult news (English et al., 2007; Naeve-Velguth et al., 2013). However, examples of past case scenarios were representative of common patient concerns, the findings suggest that a foundational set of communication skills is needed that can be transferable to different case scenarios. Additionally, to optimise student's clinical communication skills learning, staff development with CEs could broaden teaching methods to issue more prompts before intervening (Ramani & Leinster, 2008).

Of the six communication functions, several communicative tasks were not carried out by the student. Communicative tasks within the functions of decision-making and enabling treatment-related behaviour were only carried out in cases where patients were recommended hearing devices. While shared decision-making has been widely advocated in hearing rehabilitation (Laplante-Lévesque et al., 2010; Poost-Foroosh et al., 2011), in cases where a medical recommendation was suggested (e.g. ENT referral), patient participation in the decision-making process was rarely observed. Furthermore, the interjections of the CEs suggest that these functions may be beyond the skill level of the student-patient communication. Another communication function that is in the scope of student-patient communication, but was rarely observed, was attending to or responding to patients' emotions. This was consistent with previous observational studies where audiologists seldom addressed patients' emotional cues during the diagnosis and management phase (Ekberg et al., 2014; Grenness et al., 2015b). These findings further promote the need to refine communication skills education in audiology to align teaching and learning in patient-centred practices.

6.6.1. Study Limitations and Future Directions

The focus of the study was to provide an overview of students' communication including their strengths in PCC, rather than a judgment on the gaps. That is, coding a communicative task as 'partially performed' does not indicate the quality of how the student enacted the task. Nevertheless, the analytical framework developed in this study has the potential to be transformed into a professional-specific teaching tool which could raise awareness of the gaps in PCC education in audiology. For this to occur, validity and reliability need to be evaluated.

It is also acknowledged that student-patient interactions were co-constructed, and it was beyond the scope of this study to make a closer discourse analysis of the interactions, speech functions, and language choices. However, further studies can explore the communication gaps and missed opportunities to enact PCC. To understand the influence of CE's interjection on students' communication patterns, an investigation into CE's characteristics such as their supervision style, educational background and interaction with the student can provide a greater insight into the student-CE dynamic. In addition, patient ratings of the clinical encounter can build inferences on students' communication skills and patient outcomes (e.g. patient satisfaction, adherence to recommendations).

A further limitation was the homogeneity of the patient population and that only one appointment was analysed per student, which may not reflect the student's typical communication behaviour. Future studies could examine multiple appointments for each student and explore other appointment types (e.g. paediatrics, vestibular) to capture a diverse patient population.

6.7. Conclusion

The findings of this study showed that final year audiology students were largely autonomous from a discursive perspective when conducting the initial phases of a hearing assessment; however, their clinical educators tended to intervene in the management and closing phases, suggesting students' requiring further training in these areas. Further, findings of this study showed that final year audiology students demonstrated PCC ability in fostering a therapeutic relationship, according to the King and Hoppe's (2013) definition and in gathering information during history taking. The CE's interjection during the management planning stage coincided with students' partial display of PCC at this time. Of the six communication functions, communicative tasks within the functions of decision-making, enabling treatment behavior and responding to emotions were rarely observed. The findings in the study provide novel insight into the key communication tasks during hearing assessment and highlight areas for future audiology education and assessments to optimise students' PCC.

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6.9. Declaration of interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of this article.

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Chapter 7. Discussion & Conclusions

7.1. Introduction

The purpose of this final chapter is to synthesise the key findings from the three studies and discuss the implications for audiology education to optimise future audiologists' clinical communication. This chapter begins with a summary of the study findings to address each research question; followed by an integrated discussion of the findings from the three studies. Implications for audiology education will then be discussed, along with acknowledgment of the strengths and limitations of the research. The chapter will conclude by outlining future research directions.

7.2. Overview of Research Findings

The overarching aim of the research was to explore patient-centred communication in audiology education from a teaching and learning perspective. The first study, contained in chapter four, aimed to examine the perspectives of audiology educators towards patient-centred communication, including barriers and facilitators to implementing and developing patient-centred communication skills in the university and clinical settings. Analysis of nine semi-structured interviews from audiology programme coordinators and key teaching staff revealed four themes that influenced patient-centred communication education: professional culture and values, contextual factors (meeting accreditation standards and limited teaching resources), knowledge and understanding of patient-centred communication, and individual-level factors (students and educators). The competing barriers and facilitators within the four

themes demonstrated the complexities of unifying the perceived separation between a biomedical approach and patient-centred communication skills in the audiology curriculum. Findings supported the paradigm shift towards incorporating patient-centred communication education into the audiology curriculum; however, misalignments remain between the espoused goals of patient-centred communication in audiology education and the students' experiences on clinical placements.

In the second study, contained in chapter 5, the focus shifted to audiology students to address two research aims: i) to explore audiology students' perception of their clinical communication skills during a university-based clinical placement, and ii) to explore their perspectives of learning clinical communication in the audiology program. Fifteen final-year audiology students provided insights into their own clinical encounter with an adult patient at a university-based teaching clinic. Video reflexivity and thematic analysis of the semi-structured interviews revealed four themes. While the first theme described that students believe they 'strive to be patient-centred', the next two themes of 'assessment shapes behaviour' and imbalanced 'power relations' were perceived as hindrances to students' patient-centred communication. The final theme of 'what students want' provided some explanatory power to students' communication performance and learning of clinical communication skills. The student' perspectives highlighted the barriers encountered by learners to enact and acquire patient-centred communication.

In the final study, contained in chapter 6, observations of student-patient communication were performed to identify the main communicative clinical tasks in a supervised hearing assessment appointment and whether students' communication aligned with principles of patient-centred communication. Genre analysis identified the macro-stages of a hearing

appointment and when the supervising clinical educator predominantly intervened. Using *The Patient-Centred Communication Analytical Framework for Audiology*, students demonstrated strengths in fostering the relationship, but exhibited a directive style of communication during the diagnosis and management phase. A significant positive relationship was found between the clinical educator's input and students' display of patient-centred communication skills. The findings highlighted that gaps in students' patient-centred communication skills may stem from both a lack of skills as well as scarcity in learning opportunities provided during the clinical placement.

7.3. Integration of Findings and Contribution to the Literature

This research considered multiple perspectives (i.e. teachers, students and observed communication behaviour) and how these perspectives were realised in actual hearing assessment appointments. Juxtaposed findings identified areas of incongruence between teachers' and students' espoused preferences for patient-centredness and the observed clinical interactions. Themes from teachers' perspectives described both macro-level (i.e. professional culture, contextual factors) and micro-level (i.e. individual factors and knowledge) influences on patient-centred communication education. In comparison, students perceived micro-level influences (i.e. student-patient interactions) as focal to learning patient-centred communication. Figure 7.1 presents how the key themes from teachers' and students' perspectives can be used to understand the contributing factors for the gaps in students' patient-centred communication. Although an interconnection exists between the themes from the interview studies and observational findings, the arrows depict aspects within each theme that were most salient with the communication behaviour.

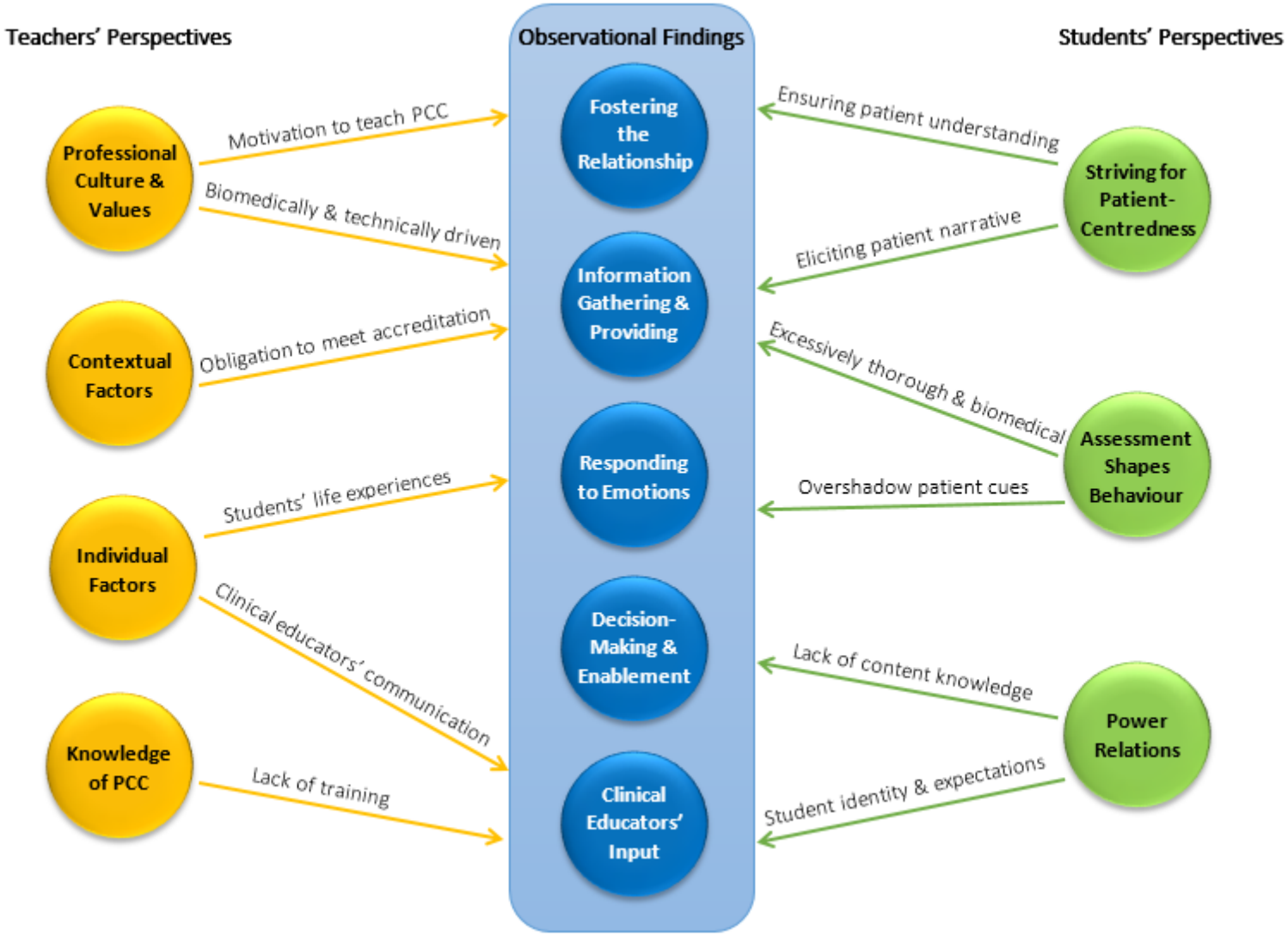

Figure 7. 1. Integration of findings from teachers' and students' perspectives and observations

From the observational findings, students' display of fostering the relationship was aligned with teachers' motivation to cultivate positive student-patient interactions and students' perceived efforts to be patient-centred. Using communication strategies of ensuring patient understanding and eliciting patient narratives, most students displayed adequacy in gathering and providing information. However, students' tendency to focus on biomedical information during history taking and provision of diagnosis was influenced by the assessment criteria that was formed based on accreditation requirements.

Missed opportunities to respond to patients' emotions carried different explanations from teachers and students. Teachers reflected that students missed patient cues due to their natural communication skills and limited life experiences, whereas students reported the cause to stem from their focus on the assessment or patient characteristics. Within the theme of power relations, students reported that a lack of audiological knowledge may explain the deficit in decision-making and enabling treatment communication behaviour. Moreover, students' perception of being a novice and lack of confidence to drive the appointment may increase the clinical educator's input during the clinical encounter. From the teachers' perspectives, the clinical educator's natural communication skills, teaching experience and training, and supervision style were acknowledged to influence students' communication training.

Collectively, findings provide insight into the multifaceted influences on patient-centred communication education in audiology. The next section will further synthesise the findings to discuss the lack of priority given to patient-centred communication and the separation between clinical tasks and patient interactions.

7.3.1. Patient-Centred Communication is Valued but Not Prioritised

The incongruence between the perceived preferences for patient-centred interaction and clinical interactions were consistent with existing literature where reports of clinicians' preferences (e.g. Ali, Meyer, & Hickson, 2018b; Laplante-Lévesque et al., 2014; Manchaiah et al., 2016a) do not align with actual clinical behaviours (Ekberg et al., 2014; Grenness et al., 2015b, 2015a). Findings in this body of research suggest that patient-centred interactions were not always prioritised. For instance, from a teaching perspective, meeting educational requirements (e.g. accreditation, assessment rubric) took a greater priority over teachers' preference to further patient-centred communication training. Consequently, according to the teachers, students' display of patient-centred communication was not given the same priority as technical competencies (e.g. hearing assessments). Evident in medical education, there is potential for students' patient-centred values to diminish with clinical experience and exposure to the hidden curriculum (Archer & van Heerden, 2017; Bombeke et al., 2010; Haidet et al., 2002b). The findings in this thesis, therefore, suggest the enactment of communication that is patient-centred can easily be hindered, and that individual aspirations alone are not enough to empower patient-centred communication.

7.3.2. The Perceived Separation Between Clinical Tasks and Patient-Centred Interactions

The emphasis on clinical tasks (i.e. technical skills and biomedical content) resonated across all three studies. An underlying separation between clinical tasks and patient interactions was detailed through the perceived tension between enacting or facilitating patient-centred interactions and performing clinical tasks. Both teachers and students recognised that

biomedical knowledge and technical skills play a significant part in hearing care. In addition to the emphasis of teaching technical skills, students alluded to the need to first obtain clinical knowledge before they could focus on patient interactions. For instance, students' reluctance to demonstrate decision-making and enablement during clinical interaction may stem from a lack of knowledge on how to offer management options. Similar findings have been reported in nursing that while students valued the importance of fostering a therapeutic relationship, their perceived lack of knowledge hindered their interaction with the patient (Suikkala & Leino-Kilpi, 2005).

Furthermore, specific to the audiology profession is the basic requirement for students to feel confident in communicating with patients with a hearing impairment. Unlike other health professions, audiology students have the added challenge of learning how to regulate the volume of their voice, articulation and the use of visual cues to convey the message to their patients clearly. Audiology students also need to understand the holistic impact a hearing impairment can have on the patient and their family's daily lives.

The perceived separation between clinical tasks and interacting with the patient is not restricted to the audiology discipline and has been documented in physiotherapy (Thornquist, 1994), nursing (Chant, Jenkinson, Randle, & Russell, 2002; Suikkala & Leino-Kilpi, 2005), medicine (Bensing, 2000) and pharmacy (Greenhill et al., 2011). Mastering clinical skills often require both attention and focus, the perceived additional task of patient-centred communication further adds to the already strained cognitive load. For instance, students described the challenge of performing the hearing assessment and obtaining a correct diagnosis, whilst trying to communicate with the patient in a patient-centred manner. Here, the disconnect between technical skills and person-centred communication skills has been

described by Thornquist (1994) in the physiotherapy context as 'separate worlds'. It describes a duality between diagnostic communication that is focal to the patients' symptoms (e.g. hearing loss) and general communication where a holistic approach to the patient as a person is added. The separation between the diagnostic and general communication can result in missed opportunities to explore psychosocial aspects associated with the symptoms and limited understanding of patient concerns.

Findings in this research demonstrate a need to balance and integrate technical and communication skills to improve hearing care. Barriers to communication training need to be addressed to optimise the educational foundations of patient-centred communication. Given that audiology has been described as a relatively young discipline in comparison with other healthcare professions (Ng, 2013), there are opportunities to look outwardly at other disciplines to inform future change.

7.4. Implication of Findings

A major finding in this research was that while teachers and students valued patient-centred communication, it did not translate into practice during actual student-patient interactions. Implications for teaching and learning patient-centred communication have been detailed in chapters 4, 5 and 6. This section will expand on three main implications on students, patients and the audiology profession.

7.4.1. Students

Gaps in students' patient-centred communication can carry implications for students' self-confidence to communicate with patients and therefore the quality of the interaction. In the observational study, students showed a tendency to focus on the biomedical content and missed opportunities to acknowledge patients' emotional concerns. It is well documented that a failure to address patients' emotional concerns can negatively impact patient rapport and patient health outcomes (de Haes & Bensing, 2009). Students with insufficient capability to build a therapeutic relationship may dampen their self-confidence to carry out the appointment and diminish the patient's confidence in the student's abilities. As a result, students may continue to feel ill-prepared when communicating with patients after graduating from the audiology program. This is consistent with previous studies in the US where students reported discomfort in communicating with patients about their hearing issues (Alanazi et al., 2017; English & Zoladkiewicz, 2005).

With the recognition of patient-centred communication in the audiology scope of practice (e.g. ASHA, 2018; AudA, 2013; BSA, 2016), deficits in students' communication skills reflect a need to explore the adequacy of the current audiology program in preparing students to meet the scope of practice.

7.4.2. Patients

The observation findings showed clinical educators were more likely to interject when students did not communicate in a patient-centred manner. Given that students in the current research were in their final months of the audiology program, it is likely that deficits in patient-centred

communication will remain at the completion of the program. Hence, there may be undesirable implications for patient outcomes.

In addition to the lack of addressing patients' emotional concerns (see section 7.4.1.), students also showed deficiencies (or lack of opportunities) to initiate shared decision-making. For instance, students rarely checked the patients' health literacy before presenting the diagnosis, and very few students presented management options to inform and involve their patients in the decision-making process. The lack of shared decision-making has been documented in observational studies in audiological rehabilitation (Grenness et al., 2015; Meyer et al., 2017) and carry negative influences of patient outcomes such as non-adherence to recommendations (Mead & Bower, 2000; Zolnierek & DiMatteo, 2009). From the observational study, the two main management recommendations were hearing devices or further investigations by an ear, nose and throat specialist. Non-adherence to hearing aid recommendations further exacerbates the reported low help-seeking and hearing aid uptake (Gopinath et al., 2011; Hartley, Rochtchina, Newall, Golding, & Mitchell, 2010; Kochkin, 2007; Lin et al., 2011; Salonen et al., 2013). Moreover, failure to seek a medical opinion can have dire hearing health outcomes and negatively influence the patient's quality of life.

7.4.3. Future of the Audiology Profession

This body of research found the emphasis of technical skills and biomedical knowledge to be an influential factor in audiology education that can shape students' clinical practices after graduation. While the organisational culture can promote patient-centred communication (Luxford et al., 2011), observational findings show that experienced audiologists rarely

communicated in a patient-centred manner (Ekberg, Grenness, & Hickson, 2014; Grenness, Hickson, Laplante-Lévesque, Meyer, & Davidson, 2015a, 2015b). This can be partly explained by findings of this research where students were technically competent but demonstrated gaps in their patient-centred communication skills. Consequently, if graduates immerse themselves in a technically and biomedically focused organisation, their patient-centred communication skills are likely to further diminish. The implications for graduates' lack of patient-centred communication skills mean a reduced likelihood of patient-centred knowledge being transferred to fellow clinicians, along with students when they become supervisors. This feedback cycle will maintain the technical focus in the audiology profession and potentially hinder the growth of the audiology profession to accommodate patient needs.

7.5. Recommendations for Audiology Education

Education plays a key role in students' professional development and the attainment of clinical competencies. Collectively, findings from this research highlighted that implementation of patient-centred communication into the audiology curriculum has not fully occurred and that there are gaps in pedagogical approaches for communication. Furthermore, the findings revealed the importance of the patient-student-clinical educator dynamic, as well as barriers within and outside of the university setting. Therefore, to address the aforementioned implications of the research findings (section 7.4.), this section will explore the recommendations for: i) a consensus statement for patient-centred communication, ii) audiology governing bodies, iii) greater integration of patient-centred communication in the audiology curriculum iv) teaching methods, and v) training for clinical educators.

7.5.1. Consensus Statement for Patient-Centred Communication

The current research illuminated the absence of a unified teaching framework for patient-centred communication in audiology. At present, a clear definition of what constitutes patient-centred communication is not common knowledge amongst audiology teaching staff, which will impact teaching content and assessment. Although the groundwork on patients' perspectives of patient-centred care has been explored in an audiological rehabilitation context, (Grenness et al., 2014a), implementation into the curriculum requires careful planning to maximise outcomes across all audiological scenarios. A crucial step towards integration into curricula is to develop consensus amongst key stakeholders. In medical education, consensus statements on key communication functions have been established to inform the medical curricula (Makoul, 2001b, 2001a; Simpson et al., 1991; von Fragstein et al., 2008). While recent studies have used the Delphi technique to identify areas required for counselling practices (Meibos, 2018) and self-management support for adult audiological rehabilitation (Barker, Munro, & De Lusignan, 2015); an expanded version that encompasses patient-centred communication could provide a unified definition that is relevant across all audiology educational scenarios. Similar to the Delphi reviews (Barker et al., 2015; Meibos, 2018), experts from education, audiological organisations, and governing bodies can use evidence-based research to generate key competencies for teaching, assessing and evaluating communication skills. The collaboration of different stakeholders in audiology can strengthen the alignment between education and practice. Furthermore, a precise definition of what constitutes patient-centred communication will improve understanding of what communicative behaviour is effective, and therefore guide the quality of teaching and assessment rubrics to shape students' behaviour.

7.5.2. Audiologist Professional Bodies

Governing bodies plays a major role in the implementation of patient-centred communication in tertiary education and carries a responsibility to equip with the needs of the profession. Audiology teachers reported that the obligation to meet accreditation standards impacted how teaching content and assessment rubrics were structured. Although audiological professional bodies have introduced the concept of patient-centred communication into the scope of practice (e.g. AudA, ACAuD and HAASA, 2016; ASHA, 2018), further emphasis and detail on communication competencies are needed to stimulate change. The current core knowledge and competencies outlined in accredited Australian audiology programs consist predominately of biomedical knowledge and technical skills (Audiology Australia, 2015). While a formalised criterion for patient-centred communication skill is included where graduates are expected to "*[Perform] effective counselling to achieve appropriate rehabilitation outcomes and counsels clients with respect to the psychosocial impact of their hearing loss*" (Audiology Australia, 2015, p.6), the expected competency level is classified as 'developing' where substantial supervision would be needed. Furthermore, counselling competency skills are limited to audiology rehabilitation rather than a foundational component that is integrated across all facets of audiology. A standard for communication skills and knowledge should be taught and assessed to ensure a basic level of communication competency is achieved prior to graduation. This would include a detailed description of the main communication functions to provide clear expectations for pedagogical development and assessment.

In addition, within the Australian context, graduating students are required to undergo a one-year clinical internship program where graduates are formally supervised by an experienced audiologist which is overseen by Audiology Australia, the peak professional body for

audiologists. Given that the current culture of audiology tends to be biomedically focused, there is a risk that new graduates' acquisition of patient-centred communication skills may decline due to limited reinforcement from the organisational environment. Therefore, the professional body should consider overtly including patient-centred communication in the internship documentation to promote sustainability of communication skills. The internship program could introduce learning modules that promote graduates' self-reflection on both clinical and communication skills to promote lifelong learning. Currently, in the Audiology Australia Clinical Internship Handbook, supervisors are encouraged to ensure the graduate "communicates effectively with individuals and groups" (AudA, 2018, p21). The lack of specificity or emphasis on patient-centred communication highlights a need to detail how supervisors can facilitate interns' patient interactions. Supervisors could also be offered training on how to provide feedback to students on their communication with patients. This approach was taken by a research team who developed an intervention aimed at developing the communication skills of new graduate audiologists and their supervisors (Barr et al., 2018).

7.5.3. Towards a Patient-Centred Communication Curriculum

From a curriculum development perspective, this research detailed several barriers that are shared across other healthcare disciplines in implementing patient-centred communication into the existing curriculum (Deveugele et al., 2005). Evidence from other healthcare literature can guide how best to incorporate patient-centred communication into audiology education. For instance, there has been a shift in medical education to move clinical communication skills teaching from the periphery to the mainstream curriculum (Silverman, 2009). Kurtz and

colleagues (2003) explained that communication skills teaching should not be seen as a separate component, but integrated and layered into the existing course content to instil sustainability of communication learning. Moreover, fundamentally, communication is a complex skill that undergoes a developmental process for students and practising clinicians to become skilled communicators (Salmon & Young, 2011; van der Vleuten, 2018). Therefore, a longitudinal implementation into the curriculum and uniformity of teaching and assessments will aid the development and retention of students' communication skills (Hook & Pfeiffer, 2007; Kramer et al., 2004; Rider & Keefer, 2006; van Dalen et al., 2001).

Various approaches to integrating communication into medical programs are described in the medical education literature (Kalet et al., 2004; Rider, Hinrichs, & Lown, 2006; van Weel-Baumgarten et al., 2013). It has been recommended that foundational communication skills should be implemented early to build awareness and sensitize students to patient-clinician interactions (Spencer & Silverman, 2001). A progression of communication scenarios from generic to complex can be facilitated through a mixture of teaching methods, such as role-modelling, role-play, videotaped interviews, and interviews of simulated patients, and assessments such as Objective Structured Clinical Examinations (OSCE) (Kalet et al., 2004; Rider et al., 2006). In addition, as argued throughout this thesis, a central component of students' communication skills learning is through clinical placements and putting skills into practice immediately to achieve optimal learning.

Informed by these principles, a communication curriculum for audiology can adopt an integrated and longitudinal approach to incorporate patient-centred communication into the mainstream curriculum. A suggested basis of the curriculum design for an Australian Master of Clinical Audiology is detailed in Table 7.1. The individual subjects are not included, as

communication learning objectives should be integrated with the relevant topics throughout the semester.

Table 7. 1: Towards a curriculum for patient-centred communication for audiology

	Year 1		Year 2	
	Semester 1	Semester 2	Semester 1	Semester 2
Learning objectives	Introduction to case history taking: - Elicit patient perspectives - Establish patient rapport - Gathering information - Understanding patient perspectives	Consolidation of case history Introduction to diagnosis and management: - Provide information - Respond to patient emotions - Elicit shared decision-making - Enable treatment behaviour	Consolidation of case history, diagnosis and management communication Introduction to complex case communication - Counsel tinnitus patients - Breaking bad news - Angry patients - Anxious patients - Patients with difficulty communicating - Family member	Consolidation of complex case communication Student-led: - Cases based on assessment performances - Challenges encountered by students - Practice of previous cases
Teaching tools	Theoretical basis Video analysis Role-plays Group discussions Clinical observations	Group discussions Clinical participation Video-recordings Role-plays Simulated patients Self-reflections	Group discussions Clinical participation Video-recordings Role-plays Simulated patients Self-reflections	Group discussions Clinical participation Video-recordings Role-plays Simulated patients Self-reflections
Assessments	Clinical feedback Peer-review	Clinical feedback OSCE	Clinical feedback OSCE	Clinical feedback OSCE

As part of integrating communication into the curriculum, there are also avenues to explore interprofessional education. Given that clinical communication is the basis of healthcare delivery across healthcare disciplines, it would be advantageous to collaborate with other health disciplines to broaden students' knowledge of the scope of the healthcare system. Peer role-play exercises with students from other disciplines can also increase authenticity as there is less familiarity with the 'clinician'. From a resource standpoint, this can reduce the frequency

of hiring simulated patients in the initial phases of the program. The integration of content with communication will be useful for peer-related feedback to correct any use of jargon and encourage active participation of the 'patient' during management planning.

To incorporate these communication objectives, changes to the course objectives, learning outcomes, teaching content, and assessment rubrics will need to be approved by the educational and accreditation stakeholders.

7.5.4. Teaching Recommendations

There is ample evidence in medical education regarding the quality of teaching in aiding the acquisition and retention of communication skills (Aspegren, 1999; Makoul & Schofield, 1999; Spencer & Silverman, 2001). The separation of communication skills teaching from the mainstream content was detailed in the findings from teachers' perspectives where a one-time workshop or a series of short communication workshops were typical in audiology programs. This contributed to the consequence of the perceived barrier of allocating additional timetabling resources for communication content. To overcome this separation, the Calgary-Cambridge Guides for medical communication is an example of 'marrying' theoretical and practical knowledge of communication skills (Kurtz & Silverman, 1996; Kurtz et al., 2003). The comprehensive guide identifies 71 skills that are heavily based in a medical context. The 'Time and Talk' from the Ida Institute (https://idainstitute.com/) is an adaptation of the Calgary-Cambridge guides that has been modified for the audiological context and adopts the use of group discussions, simulated patients and role-plays to promote active learning. It is

understood that the Ida Institute plans on expanding the Time and Talk tool into a University course which will be freely available to educators around the world in the coming years.

To address students' communication gaps in eliciting decision-making and enablement, a teaching framework could be modelled from Slade and colleague's (2015) work on shared medical knowledge and decision-making in a hospital emergency department. The authors advocated that communication of medical knowledge and establishment of clinician-patient relationships are essential to the patient journey (Slade et al., 2015). Adaptations of Slade and colleagues' (2015) model can guide how communication functions could be taught in an audiological context (Table 7.2).

Table 7. 2: Strategies for shared audiological knowledge and decision-making

Communication strategies	Description	Examples
Seek and recognise the patient's knowledge and opinions about their audiological condition.	Facilitate the knowledge-building process by eliciting and valuing patients' knowledge about their case and any prior treatments.	"So you mentioned the ear infection is in your right ear. Can you tell me when it started or what may have triggered it?"
	Normalise patients' audiological symptoms and concerns about what is happening to them.	"There's a range of factors that can trigger your tinnitus. What do you think might be the cause?"
Explain audiological concepts clearly by moving between audiological and common sense (everyday) language.	Limit technical language or jargon and explain terms that patients might not understand.	"What we've found is you do have a moderate hearing loss. Meaning people will need to raise their voices a bit for you to hear better"
Spell out explicitly the rationale for recommendations or management options.	Provide patients with clear reasons for recommendations or management plans.	"Based on the listening situations you have just described and your preference for small hearing aids, how do you feel about this particular hearing aid style?"
	Wherever appropriate, make the reasoning process available to patients.	"The reason why I suggested this hearing aid option was because of your work situation where you are struggling to hear conference calls"
	Explain the sequence and priority of management options.	"Before we fit you with hearing aids, the main priority is to treat that ear infection. Keep using the prescribed drops and once the infection has cleared, we will fit you with the hearing aid"
Provide clear instructions for referrals and other follow-up options, appointments, etc.	State instructions clearly and repeat or ask the patient to repeat to confirm comprehension.	"I will be sending a report to your GP today. Make an appointment to see him/her by the end of the week to get the prescription"
Signpost the clinical processes of the appointment the patient will need to go through.	Explain the steps the patient is likely to go through in the appointment and the different demands that will be made of him/her.	"So we will be going a series of assessments to test the different components of your hearing. First, I will look in your ears etc"
Negotiate shared decision-making about management options.	Encourage patients to debate, clarify and discuss their management options.	"We've discussed listening strategies in the last appointment, which didn't make a huge improvement. Would you like to hear about other alternatives?"
	Encourage patients to comply with recommended options by negotiating preferred management plans with them.	"We've discussed hearing aid options, and you've just said that you think you'd like to try one. I can tell you more about how you can best adjust to hearing aids, but it's best if it suits your preferences. If you had hearing aids, how would you prefer to wear them?"
Repeat key information, check comprehension and offer clarification throughout.	Continually check that patients have understood and offered the opportunity for them to ask for clarification.	"In summary, there is a slight drop in your hearing since last year. I will send a copy of the results to your GP and book make another appointment to review your hearing in 12 months."

Modified from Slade et al (2015)

Findings from the second study suggest that audiology students prefer more structure in how communication should be taught, and they highlighted the need to account for their natural communication skills. The strategies detailed in Table 7.2 can be used during the early stages of the program to give students the necessary vocabulary in carrying out the appointment. Authentic experiential learning such as standardised patients could help students practice in a supported environment and receive individualised feedback on how they made the patient feel and what could be improved. With clinical experience, students can develop their own communication style that fits with their personality. There are, however, risks that some students may rote-learn the phrases and negate the task of actively listening to the patients' concerns. Encouraging students to self-reflect on their own strengths and weaknesses can aid the development of their own communication style to promote naturalistic interactions. In addition, students' natural communication skills needed to be considered to prevent disengagement if the content is perceived as too basic. On the contrary, extra training or early remediation should occur for students who struggle with clinical communication.

Further to the pedagogical approaches, assessment is one method that draws students' attention and can alter their behaviour (van der Vleuten, 2018; Wormald et al., 2009). Assessment of students' communication must be emphasised in order for any skill to be learned and developed (van der Vleuten, 2018); however, careful consideration of the assessment format must be made to avoid a behaviourist approach of punishments and rewards. For instance, providing a grade on the student's performance can impede efforts to improve as it offers little descriptive feedback (Shute, 2018). Similarly, tick-box assessments can have negative effects in driving learners to 'beat the system by playing the game' (van der

Vleuten, 2016, p.887) as opposed to learning skills as part of the foundation of life-long learning.

Lastly, in order for communication training to be taught successfully, teaching staff would also benefit from training. The provision of training to teachers or training the trainers is a known concept amongst health professions (Pearce et al., 2012). By upskilling teaching staff with the knowledge and teaching tools, it can increase their confidence to facilitate a communication training session and identify areas in students' communication that require further attention. The quality of classroom-based learning is a fundamental basis to translate students' communication learning into a real clinical encounter.

7.5.5. Provision of Training for Clinical Educators

In addition to classroom-based teaching, a key finding of this research was that clinical educators play a pertinent role in students' clinical communication education; yet, the provision of training and support to mitigate the misalignment between teaching and clinical practice is limited. Across different health professions, clinical educators have been shown to facilitate students' learning through student observation and provision of opportunities to participate in the appointment (Gignac-Caille & Oermann, 2001; Hesketh et al., 2001; Laitinen-Väänänen et al., 2007; Ng et al., 2012). Within the audiology profession, there is a recent focus on the role clinical educators play in developing students' counselling skills (Finai et al., 2018; Muñoz, 2018; Muñoz et al., 2017).

Both teachers and students perceived workplace learning through clinical placements to be an important element for communication training. Literature from medical education advocates

for the combination of authentic learning environments and mentoring through role-modelling and provision of meaningful feedback (Bennett & Lyons, 2011; Branch & Paranjape, 2002; Ramani & Leinster, 2008; Sherbino et al., 2010; Slade et al., 2011; van der Vleuten, 2018). Role modeling is an important teaching tool that not only teaches by example but assists students to formulate professional identity through observation of professional behaviour (Kenny et al., 2003). In particular, feedback from clinical educators can build students' self-awareness and foster reflection on their own performance. However, the quality of clinical educators' feedback and dominance during the appointment can demotivate and hinder students' workplace learning (Branch & Paranjape, 2002; Clynes & Raftery, 2008; Laitinen-Väänänen et al., 2007).

The university-based clinical educators demonstrated an inclination to interject in student-patient interactions, particularly in more challenging communication exchanges, rather than to provide prompts on how best to respond to the patient. This raises questions on the opportunities given to students to practice their clinical communication and nurture their self-awareness of mistakes. Recent studies in the audiology discipline have detailed clinical educators' lack of confidence when teaching communication skills (Muñoz et al., 2017). Training clinical educators to provide structured and descriptive feedback will not only benefit students but also upskill the educators to role-model patient-centred behaviours during their clinical appointments. Consequently, this may inadvertently provide an increase in the educator's awareness of patient-centred communication skills and improve patient outcomes.

The variation in clinical supervision calls for support and training on effective clinical supervision, both for students and new graduate interns. There are opportunities to explore frameworks from other health disciplines to inform clearer guidelines in training clinical

educators (Hesketh et al., 2001). One example comes from the AMEE Guides on the framework for effective supervision in medical education (Kilminster, Cottrell, Grant, & Jolly, 2007). Given the similar roles of clinical educators in audiology and other health professions, an adaptation of Kilminster and colleagues' guidelines can be recommended for clinical educators in audiology (Table 7.3).

Table 7. 3: Guidelines for clinical educators in audiology

Recommendations for clinical educators
• Review university requirements to ensure consistency is maintained between university teaching and clinical practice
• Maintain a positive and inclusive learning environment where the student feels comfortable to ask questions
• Set aside additional time to discuss students' learning objectives and offer students opportunities to perform clinical tasks with the patient
• Provide constructive and descriptive feedback on the students' clinical and patient interaction skills at the end of each appointment where appropriate
• Assessment of students' skills should include clinical management, as well as patient interaction
• Continuity of supervision where possible to monitor students' development over time and to strengthen the student-clinical educator relationship
• Participate in training opportunities to keep up-to-date with current evidence-based practices and strategies to supervise students

Adapted from Kilminster et al (2007)

Any assessments or feedback in authentic settings will require clinical educators to make a professional judgment on students' communication. The framework will aid the consistency of supervision in both university-based and external clinics, and heighten clinical educators' own self-reflective practice. Training clinical educator's ability to identify and offer feedback on students' communication capabilities can improve the efficiency and quality of the clinic by providing early remediation to improve students' future patient interactions.

7.5.6. Summary

In summary, the recommended changes to the curriculum, teaching methods, and clinical education can help remove the barriers and facilitate students' enactment of patient-centred communication. With the limited external clinical placements and increase in student intake, the findings indicated the challenge of monitoring consistency in clinical supervision and enforcing existing guidelines to foster students' clinical learning. Communication skills training not only better prepare students for clinical interactions, but also their own self-confidence in interacting with patients. As a consequence, clinical educators may be more inclined to allow students to communicate with patients. The positive feedback loop can help maximise students' communication skills, which may strengthen the relationship between the university and external placements. As a result, external clinical educators may perceive students as co-workers who help ease the clinical load as opposed to a burden. Positive clinical placements can help student employability and increase the likelihood of the clinic taking on more students.

The teaching staff and clinical educators play a key role in disseminating knowledge to students, therefore it is vital to train the trainers on patient-centred communication. The implications include benefits towards upskilling knowledge base and clinical capabilities, as well as strengthening the alignment between the university and clinical placements. For instance, training experienced audiologists on patient-centred communication skills has the potential to alter current biomedically focused practices. In particular, encouraging clinical educators to role-model patient-centred interactions as well as monitor and provide feedback on students' or graduates' communication takes on a dual benefit of self-reflection on their own communication and reinforcing students' communication. The evolving nature of clinical

communication towards patient-centredness can alter the future of the audiology profession to place a greater emphasis on investing in patient-audiologist interactions.

7.6. Strengths and Limitations

The strengths and limitations of the three studies have been acknowledged within the discussion section of the respective chapters. The following section will further address the strengths and limitations of the research as a whole.

7.6.1. Participants in Each Study

One of the strengths of the three studies was the selection of participants to address the research aim and questions. The studies included course coordinators from all six audiology programs (study one - teachers' perspectives) and students from two different universities in Australia (study three - observation). Data collection from multiple sites provided a broad insight into the teaching and learning perspectives of each university's curriculum, and students' clinical communication performances. By combining a range of perspectives from teachers and learners, this work helps to provide different angles and offer a greater understanding of patient-centred communication education.

In study two (students' perspectives), the decision to include final year students from one Australian university introduced some limitation in the transferability to other audiological teaching settings. The limitation of self-selection bias in studies two (students' perspectives) and three (observation) was also highlighted in chapters 5 and 6 as it may not have represented

students who were less confident in their communication skills. The lack of student diversity was further displayed in students' characteristics where there was a lower proportion of male students, international students, and variability in student numbers between universities A and B.

While the research aimed to explore different perspectives to patient-centred communication education, it was beyond the scope of this research to conduct interviews with clinical educators (university-based and externally-based), patients, and accreditation stakeholders. Similarly, findings in the observational study suggest the importance of the clinical educators' in encouraging students to enact patient-centred communication. The decision to exclude clinical educators' input in the analysis was highlighted as a study limitation in chapter 6 and opportunities for further research were presented.

In addition, the student-patient interactions were focused on adult hearing assessments, which is one of the most common audiology appointments. However, the exclusion of other appointment types (e.g. paediatrics, tinnitus, vestibular etc.) does limit the breadth of audiology cases and patient characteristics. Therefore, the observational findings of students' communication may differ in other audiology appointments.

7.6.2. Data Analysis

The strength of using different methods in the three studies (i.e. semi-structured interviews, reflexivity, genre and quantitative content analysis) enabled crystallisation of the findings to provide a deeper insight into the patient-centred communication education (Ellingson, 2009).

The quantitative strand in coding student-patient-clinical communication enabled further integration of the studies through triangulation of the qualitative and quantitative findings.

A further strength of this research was the process to ensure methodological rigour across the three studies. This was brought about by engagement and guidance from two experienced researchers. Regular discussions were carried out throughout the study design, implementation and data analysis of all studies. Discussions surrounding the data analysis in the three studies ensured transparency and verification of the interpretations. This process was imperative in the generation of *The Patient-Centred Communication Analytical Framework for Audiology* in the observational study to map students' patient-centred communication skills. The strengths of adopting de Haes and Bensing's (2009) six-function communication model was the identification of fundamental communication functions that influenced patient outcomes. The communication functions were applicable to most audiological appointments, which suited the different case scenarios between the two universities. However, while the analytical framework was based on empirical evidence, introducing a novel analytical framework concurrently produced a limitation to the study. As discussed in Chapter 6, performing quantitative interrater reliability and validity in coding the communicative functions were not the focus on the study. There is scope to use the analytical framework as an assessment tool; however, further statistical analysis is required to validate and verify the codes before it can be implemented in a broader context. In addition, while the video data was viewed to account for any non-verbal communication in the coding process, future studies should consider incorporating a separate analysis on non-verbal communication characteristics.

7.7. Future Research

The findings in this research highlighted several implications for audiology education and set the groundwork for further research. While some of the opportunities for future research have been mentioned in chapters 4, 5 and 6, three main areas remain to drive the implementation of patient-centred communication: effectiveness of communication training modules, clinical educator communication, and patient outcomes.

7.7.1. Effectiveness of Communication Training in Audiology

Research is needed to investigate the effectiveness of teaching and learning initiatives and modifications in students' communication behaviour. For instance, from a curriculum perspective, studies can investigate how communication training can be integrated longitudinally. This may include collaborations with other health disciplines to devise a shared communication education framework. Outcome measures can include the degree of improvement over the course of the audiology program, sustainability of students' communication behaviour after graduation, student satisfaction, employability and impact on university resources. Evidence-based curriculum models can inform the successful implementation of communication training across universities.

Studies on specific pedagogical models can provide guidelines on how best to structure communication training in a classroom or audiology clinical setting. Although there are available teaching resources in other healthcare professions such as the Calgary-Cambridge Guides (Kurtz & Silverman, 1996), Maastricht History-Taking and Advice Checklist (van Dalen et al., 2001), and Smith's patient-centred interviewing (Fortin et al., 2012), modifications are

needed to accommodate the audiological context. This includes finding effective means to implement communication training into the audiology curriculum and considerations of students' preferences to acquire communication skills through active and experiential learning as described in research outside of audiology (Deveugele et al., 2005; Kalet et al., 2004; van Dalen et al., 2001).

Evaluations on the effectiveness of the teaching model should extend beyond the content and student performance, but also include strategies to accommodate with students' learning needs and increase their motivation. There are opportunities to refine existing teaching models for patient-centred communication, such as the 'Time and Talk' from the Ida Institute. Such research has received ethics approval and data collection has commenced in September 2018. Studies in this area carry the potential to not only implement different teaching methods in the audiology curriculum, but also provide training modules to upskill experienced audiologists as part of their professional development.

Successful implementation of communication training in the audiology curriculum and professional development has the potential to strengthen the audiologist professions' patient interaction and improve patient hearing outcomes.

7.7.2. Observational Studies Exploring Clinical Educator's Communication

To optimise students' learning during clinical placements, further research into clinical educator's influence over the student-patient interaction can inform evidence-based guidelines and training. While recent studies have investigated the clinical educator's perception in teaching counselling skills (Muñoz et al., 2017), observational-based studies

would further explore the student-patient-clinical educator dynamic and the clinical educator's enactment of patient-centered communication. The influence of clinical educators' characteristics (e.g. experience, training), supervision style and teaching context (e.g. university-based vs external clinics) should also be investigated. Furthermore, of interest would be the quality and type of feedback provided to students during the clinical placement, and its impact on student learning.

7.7.3. Patient Outcomes

Existing evidence for patient-centred communication on patient outcomes predominately resides in the medical context (de Haes & Bensing, 2009; Epstein & Street, 2007; Greenfield, Kaplan, Ware, Yano, & Frank, 1988; Zolnierek & DiMatteo, 2009). Although patient-centred communication is beginning to gain recognition in audiology, many of the studies are situated in hearing rehabilitation (e.g. Ekberg et al., 2014; Grenness, Hickson, Laplante-Lévesque, & Davidson, 2014; Laplante-Lévesque et al., 2012; Poost-Foroosh, Jennings, & Cheesman, 2015).

Further research could consider integrating patient-centred communication with existing therapies such as cognitive behavioural therapy (Andersson, 2002; Andersson, Asmundson, Denev, Nilsson, & Larsen, 2006) and motivational interviewing (Zarenoe, Soderlund, Andersson, & Ledin, 2016) on patients with tinnitus or vestibular symptoms. Such research can shape the way therapies are delivered to optimise patient outcomes including perceived severity of symptoms, patient satisfaction, and adherence to recommendations. This would allow the correlation of specific patient-centred communication function on patient outcomes to offer justifications into which communicative goal(s) should be prioritised and taught.

Additionally, to identify communication structures that foster positive patient outcomes, genre analysis can be employed to compare effective and ineffective student-patient communication. In medical education, similar research on doctor to doctor telephone calls have shown distinctive communication patterns of ineffective calls (Pryor & Woodward-Kron, 2014). The macro-structural perspective of communication can help audiology educators identify when students are performing sub-optimally and provide feedback on how best to carry out the patient interaction successfully.

7.8. Conclusions

This research explored the nature of teaching and learning patient-centred communication in the discipline of audiology. The findings support the notion that effective clinical communication is central to the provision of quality hearing care and education preparation plays a critical role in shaping future audiologists. Specifically, audiology teachers and students shed light onto their shared motivation for patient-centred communication to be implemented into the audiology curriculum; however, gaps remain to enact these communication functions during a clinical encounter. Collectively, the findings from all three studies identified current barriers in implementing patient-centred communication education and informed teaching approaches that are supported by other healthcare education literature. This body of research recommends that the integration of communication skills training goes beyond the educating of students, and extends to teaching staff, and practising audiologists. Ultimately, this approach will help advance the audiology profession and alter the technically focused culture to strengthen the provision of hearing healthcare and facilitate positive patient outcomes.

7.9. References

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Appendices

Appendix A: HREC approval letter from The University of Melbourne

THE UNIVERSITY OF MELBOURNE

15 March 2016

Dr C.M. Grenness
Audiology and Speech Pathology, School of Health Sciences
The University of Melbourne

Dear Dr Grenness

I am pleased to advise that the Behavioural and Social Sciences Human Ethics Sub-Committee has approved the following Project:

Project title:	**Audiology Students and Patient-Centred Communication: A Mixed Methods Study in Audiology Teaching Clinics.**
Researchers:	**Prof R C Dowell, S Tai, A/Prof R Woodward-Kron, Dr C M Grenness**
Ethics ID:	**1545971**

The Project has been approved for the period: **15-Mar-2016 to 31-Dec-2016**

It is your responsibility to ensure that all people associated with the Project are made aware of what has actually been approved.

Research projects are normally approved to 31 December of the year of approval. Projects may be renewed yearly for up to a total of five years upon receipt of a satisfactory annual report. If a project is to continue beyond five years a new application will normally need to be submitted.

Please note that the following conditions apply to your approval. Failure to abide by these conditions may result in suspension or discontinuation of approval and/or disciplinary action.

(a) **Limit of Approval:** Approval is limited strictly to the research as submitted in your Project application.

(b) **Variation to Project:** Any subsequent variations or modifications you might wish to make to the Project must be notified formally to the Human Ethics Sub-Committee for further consideration and approval. If the Sub-Committee considers that the proposed changes are significant, you may be required to submit a new application for approval of the revised Project.

(c) **Incidents or adverse effects:** Researchers must report immediately to the Sub-Committee anything which might affect the ethical acceptance of the protocol including adverse effects on participants or unforeseen events that might affect continued ethical acceptability of the Project. Failure to do so may result in suspension or cancellation of approval.

(d) **Monitoring:** All projects are subject to monitoring at any time by the Human Research Ethics Committee.

(e) **Annual Report:** Please be aware that the Human Research Ethics Committee requires that researchers submit an annual report on each of their projects at the end of the year, or at the conclusion of a project if it continues for less than this time. Failure to submit an annual report will mean that ethics approval will lapse.

(f) **Auditing:** All projects may be subject to audit by members of the Sub-Committee.

If you have any queries on these matters, or require additional information, please contact me using the details below.

Please quote the ethics ID number and the title of the Project in any future correspondence.

On behalf of the Sub-Committee I wish you well in your research.

Yours sincerely

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Secretary, Behavioural and Social Sciences HESC
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Appendix B: Interview Topic Guides for Studies One and Two

Appendix B-1: Study One (Teachers' perspectives) Interview Topic Guide

Introduction: (unrecorded)

Thank you for agreeing to participate in this study. The aim of this interview is to explore how clinical communication and PCC are taught in audiology courses across Australia. I am interested to look at your perspectives on possible barriers and facilitators on how this is taught. The interview will be audio-recorded and I will be taking notes during our discussion. The information that you provide in this interview will remain confidential. The interview will take about an hour. Do you have any questions before we start?

Broad Interview Questions: (recorded)

- In the context of audiology, what is your understanding of patient-centred communication?
- When students graduate with their audiology degrees, what, (if any), aspects of (patient-centred) communication do you consider most important for students?
- How is communication taught in the course?
- Does it incorporate the concept of patient-centred care?
- Are there any modules or units dedicated to (patient-centred) communication skills training?
- How much of this is incorporated into the course?
- Does it increase over the two years?
- Are there any models or frameworks the course has adopted to teach communication to audiology students?
- Communication skills can be taught sequentially from simple to complex or theoretical to practical. Can you describe how the student's communication skills develop over the course?
- Is communication formally assessed? How?
- Do students receive feedback on their communication skills? How?
- Can you describe how satisfied you are with the students' skills in this area?

- From your experience, can you describe how effective the communication skills training have been to aid students' learning?
- Can you describe any barriers or facilitators encountered in teaching and students' learning these topics?
- What are the areas of difficulty or gaps in communication skills that students' experiences in this area? What are the areas they excel in?
- To what extent do you see patient-centred communication skills training to be valued compared to other knowledge and skills?
- In an ideal world, how would these topics be taught, learned and assessed in your audiology degree?
- Is there anything else you wish to add?

Probing questions:

- Can you elaborate on that?
- Why? Why not?
- How do you go about?
- Can you give me an example?

Appendix B-2: Study Two (Learners' perspectives) Interview Topic Guide

Introduction: (unrecorded)

Thank you for agreeing to participate in this research. This part of the study aims to explore your perspectives into your own clinical communication and patient-centredness skills. I will play you a couple of sections of your video-recording from the clinical appointment and ask questions to explore your point of view on the interaction. The interview will be audio-recorded and I will be taking notes throughout the discussion. The information that you provide in this interview will remain confidential. The interview will take about an hour. Do you have any questions before we start?

Broad Interview Questions: (recorded)

- Before I play the video-recording, what was your general perception of the clinical encounter?
- Are there aspects of the interaction you would like to talk about? Why?

** Shows segment(s) of the video-recording to the student**

- Can you talk through this interaction for me?
- How did you feel the interaction went?
- Thinking about patient-centred care in audiology, can you give examples of your interaction that was in line with patient-centred care, and examples that wasn't? Why?
- Which aspects of the interaction were satisfied or dissatisfied with?
- Now that you have had a chance to look at the video-recording, is there anything you would have done differently?
- Has your general perception about the encounter changed after viewing the appointment?

Probing questions

- Can you explain why you said […]?
- How did you feel when the patient said […]?

Finished video-viewing

- In the audiology course, can you describe what has been taught on clinical communication?
    - What aspects do you find useful/not useful?
    - Do you think there are areas that need to be expanded on?
- How prepared do you feel you were in your adult clinical interactions?
- Is there an area that you often find challenging when communicating with patients?
- To what extent do you receive feedback on your clinical communication with patients?
    - How much feedback would you like?
    - Can you describe how you would like to receive feedback?
- Can you describe or suggest ways that clinical communication can be best taught to facilitate your learning?
- Do you find viewing your video-recording a useful learning tool?

<u>Probing questions:</u>

- Can you elaborate on that?
- Why? Why not?
- How?
- Can you explain it in another way?

Appendix C: Study Three (Observational) Supplementary online materials

Appendix C-1: Expanded Version of The PCC Analytical Framework for Audiology

Six-Function Model (de Haes & Bensing, 2009)	Code	**Student PCC** (Epstein & Street, 2007; King & Hoppe, 2013)	**Student Example Quotes**
1.Fostering the relationship	1a	Addressing the patient appropriately e.g. introduction	'Hello Mr [Patient]. My name is [Student], and this is my supervisor, [CE]. How are you today?'
	1b	Listen actively Verbal: e.g. back channelling Non-Verbal: e.g. maintaining eye contact, forward lean to indicate attentiveness, nodding to indicate understanding, absence of distracting movements	'Mmm… uh-ha' Use video to identify nonverbal behaviour.
	1c	Build patient rapport e.g. informal/small talk (related and unrelated to hearing), laughter/ humour	'Hope the traffic wasn't too bad for you getting in'
	1d	Engage in patient understanding e.g. reassurance of symptom, agreement etc.	'It is quite normal for people to get ringing in their ears from time to time...' 'Ok/I see…'
2.Gathering information	2a	Elicit patients' main concerns e.g. ask open-ended questions	'What brings you in today?' 'Tell me more about…'
	2b	Allow patient to complete responses without interruptions	'Sorry, you were saying?' 'Go on'
	2c	Encourage patient's perspectives	'What do you think triggered the ringing in your ears?' 'What symptoms did you notice?'
	2d	Explore psychosocial effects	'How has this affected your daily life?'
	2e	Explore other relevant hearing-related questions. Include transitions to avoid *check-listing*	'I want to ask some additional questions about your hearing to get a broader picture. Have you had any history of noise exposure?'
	2f	Clarify and summarise information	'Can I just clarify…' 'Ok, so it started a month ago and it got worse in the past week…'
	2g	Transitions to other questions e.g. signposting	'Ok, the next thing I was to ask is…'
	2h	Invite the patient to add further information	'Was there anything else you wanted to add?'
3. Providing information	3a	Keep the patient informed e.g. provide an outline of appointment, rationale for certain questions etc.	'We are going to perform a series of tests to assess your hearing…' 'The reason I'm asking is…''
	3b	Ask the patient about their information needs	'Are you interested to know the technical details of each tests or just the main points?'
	3c	Explain nature of diagnosis in relation to patient concerns	'You mention you couldn't hear when people don't face you, is that right? Well, the results showed that you do have a hearing loss in both ears, which makes it difficult for you to hear soft speech particularly hard when people isn't facing you.'
	3d	Outline recommendations	'There are several options that can help you hear better, one would be to consider hearing devices. Is that something you would consider?'
	3e	Avoid jargon and complexity e.g. use everyday language, consider health literacy	'The hearing test showed that you will have more trouble picking up sharper sounds, similar to the higher pitched notes on a piano.'
	3f	Encourage questions and check understanding	'Does that make sense? Would you like me to clarify anything?' 'Would you like me to explain the results in detail?'
	3g	Emphasise key messages e.g. repetition & summarise	'So, just to reiterate…' 'From what you've told me so far…'
	3h	Provide patient education where appropriate	'When you face someone, you can pick up a lot of visual cues that can help fill in the gaps'
4. Decision-making	4a	Encourage patient participation in decision-making regarding treatment	'Let's go through some of the options and you can tell me which one you are comfortable with.'

	4b	Outline options, including pros and cons	'One option is to trial hearing aids; another option is to get assistive listening devices…' 'The benefit of this options is… however, the downside may potentially be…'
	4c	Explore patient's preferences and understanding	'Do you have a preference on the options we've discussed?'
	4d	Discuss uncertainty	'You seem reluctant with this option, can you tell me why?'
5. Enabling treatment-related behaviour	5a	Assess patients' readiness to change health behaviours	'Are you comfortable with the idea of getting hearing aids?'
	5b	Outline steps or processes involved with recommendations	'So the next step is to send a report to your GP about what we have found today and of our recommendation for you to see an ear, nose and throat specialist. Once the specialist has given the all clear for your ears, come back to further discuss hearing devices.'
	5c	Identify and enlist resources and support	'I can give you an information sheet on tinnitus and some apps you can try to help you sleep…'
	5d	Discuss follow-up and plan for unexpected outcomes where appropriate	'Let's arrange another appointment in 12 months to monitor any changes, but contact me if you have any questions or concerns about the results'
6. Responding to emotions	6a	Notice clues and acknowledge patients' emotions	'I can see this is worrying you…'
	6b	Explore emotions e.g. legitimation, validation	'What you are describing makes sense, it's normal to feel frustrated in that situation…' 'I can understand it must be a stressful period for you…'
	6c	Express empathy e.g. naming, Understanding, respecting, supporting, exploring	'This is worrying for you isn't it?' 'I can understand why you would feel that way' 'It sounds like you've been through a lot.' 'We are here to help…' 'How are you coping with this?'
	6d	Provide help in dealing with emotions if appropriate	'There are things to help improve…'

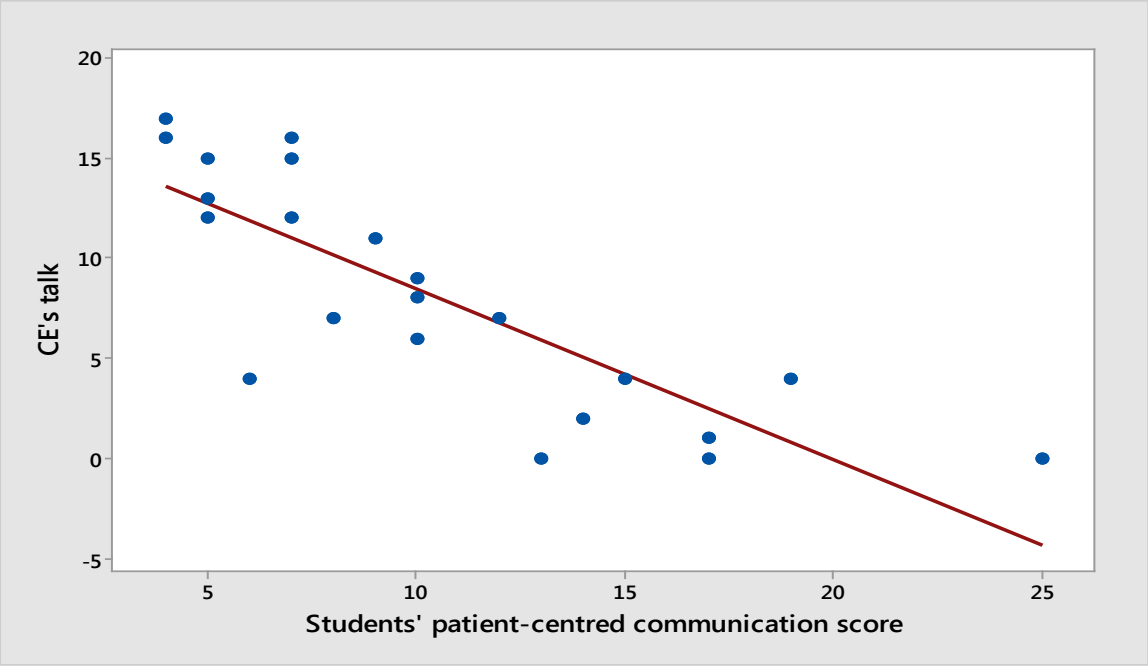
Adopted from de Haes and Bensing (2009), and Modified using King and Hoppe (2013); Epstein and Street (2007)

Appendix C-2: Students' PCC skills in a Hearing Assessment Appointment

Coding Procedure

Evidence of a PCC skill throughout the appointment in the transcript was identified with a tick (✓). An asterisk (*) indicated the student partially performed the communicative task; for instance, the student may have avoided jargon terms during history taking, but not during the explanation of results or, the student may have responded to patients' emotional concerns in some instances but missed other opportunities. A dash (-) was assigned where PCC was not displayed. In cases where the communicative skill(s) was not relevant, not applicable (n/a) was assigned. Multiple codes could be applied to each turn-taking. Additionally, any CE interjections were also recorded to capture influences of the patient-student-CE dynamic or co-construction. These instances were indicated by a 'C'. The term interjection was used to signify CE's intervention or when the CE had discursively taken over the appointment. The CE's verbal presence was not the focus of the study and therefore their communication was not analysed.

Examples of PCC Tasks		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	Total		
1. Fostering the relationship																								✓	*	[-]
1a	Addressing the patient appropriately e.g. introduction	✓	✓	*	✓	✓	✓	*	✓	✓	✓	✓	✓	✓	✓	*	✓	✓	✓	✓	-C	n/a	-C	16	3	2
1b	Listen actively (verbal and non-verbal)	✓	✓	✓	✓	✓	✓	*	✓	✓	*	✓	✓	✓	✓	*	✓	✓	✓	✓	✓	✓	✓	19	3	0
1c	Build patient rapport (e.g. small talk, non-verbal)	✓	*C	*	*	✓	✓	*C	-C	✓	*	✓	✓	*	✓	*C	✓	*	✓	-	*C	✓	*C	10	10	2
1d	Engage in patient understanding	✓	*C	*C	*C	✓	✓	-C	-C	✓	✓	✓	✓	✓	✓	-C	✓	*	✓	-	*C	✓	-C	12	5	5
2. Gathering Information																							*Total*	*57*	*21*	*9*
2a	Elicit patients' main concerns	✓	*	*	✓	✓	✓	-	*	✓	✓	✓	✓	✓	✓	*	✓	✓	✓	✓	✓	n/a	✓	16	4	1
2b	Allow patient to complete responses	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	22	0	0
2c	Encourage patient's perspectives	✓	*C	*C	✓	✓	✓	*C	*C	✓	✓	✓	✓	*	*	*C	✓	✓	✓	*C	*C	✓	*C	12	10	0
2d	Explore psychosocial effects	*	*C	*	-	✓	✓	*	-	*	-C	*	*	-	-	*	✓	✓	*	✓	✓	*	✓	7	10	5
2e	Explore other relevant hearing-related questions	-	-C	✓	*C	*	✓	-	-C	✓	*C	*	✓	-	*	-C	*	*C	-C	*C	*C	*C	*	4	11	7
2f	Clarify and summarise information	✓	*	-	✓	✓	✓	✓	-	✓	-C	✓	-	*C	-	✓	✓	-C	✓	-C	✓	✓	-C	12	2	8
2g	Transitions to other questions	*	-	✓	✓	✓	✓	*	-C	✓	✓	✓	✓	-	-	*	-	-C	-	*	*	-	*	8	6	8
2h	Invite the patient to add further information	✓	✓	✓	✓	-	✓	✓	-	✓	-	✓	*	✓	-	-C	-	-	-	-	✓	*	-C	10	2	10
3. Providing information																							*Total*	*91*	*45*	*39*
3a	Keep the patient informed	*	✓	✓	✓	✓	✓	*	*C	✓	C*	✓	*	✓	*	✓	✓	-C	✓	-C	✓	✓	✓	14	6	2
3b	Ask the patient about their information needs	*	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	-	n/a	-	-	-	-	-	1	1	19
3c	Explain diagnosis in relation to patient concerns	✓	*C	*C	*C	*C	✓	*C	*C	✓	*C	✓	✓	✓	✓	*C	*	n/a	*C	*C	*C	✓	-C	8	12	1
3d	Outline recommendations	*	*C	✓	*C	*C	✓	*C	-C	*C	✓	*C	✓	✓	*C	*C	✓	n/a	-C	-C	-C	-C	-C	6	9	6
3e	Avoid jargon and complexity	✓	*	*	*	*	✓	-C	*	✓	-C	✓	✓	✓	*	*C	*	n/a	*C	*	-C	*	✓	7	11	3
3f	Encourage questions and check understanding	✓	-C	-C	✓	✓	✓	✓	✓	-C	*	✓	✓	✓	✓	✓	✓	n/a	-C	-C	-	-	✓	13	1	7
3g	Emphasise key messages	✓	-C	-C	-C	*C	-	-C	-C	✓	-C	✓	-	*	-C	-C	n/a	n/a	-C	-C	-C	-C	-C	3	2	15
3h	Provide patient education where appropriate	✓	n/a	✓	-	*C	✓	-C	-C	n/a	-C	n/a	n/a	n/a	✓	n/a	n/a	n/a	✓	n/a	-	n/a	-C	5	1	6
4. Decision-making																							*Total*	*57*	*43*	*59*
4a	Encourage patient participation in decision-making	*	-	*	-	-	*	-C	-C	✓	-	-	*	✓	-	n/a	-C	n/a	-	-C	-C	-	-	2	4	14
4b	Outline options, including pros and cons	*	-	*	-	*C	*	-C	-	-	*	-	*	-	-C	-C	n/a	n/a	-	-C	-C	-C	-	0	6	14
4c	Explore patient's preferences and understanding	-	-	-	-	-	✓	-	-	-	-	-	-	*	-	n/a	n/a	n/a	-	-C	-C	-	-	1	1	17
4d	Discuss uncertainty	-	-	-C	-	-	✓	-	-	-	-	-	-	-	-	-C	n/a	n/a	-	-	-	-	-	1	0	19
5. Enabling treatment-related behaviour																							*Total*	*4*	*11*	*64*
5a	Assess patients' readiness for behaviour change	✓	n/a	✓	n/a	n/a	*	✓	n/a	n/a	n/a	n/a	*	✓	-	n/a	n/a	n/a	n/a	-C	-C	n/a	n/a	4	2	3
5b	Outline steps or processes	-C	-C	-C	-C	-C	✓	-C	*C	-C	*C	-C	✓	✓	✓	-C	n/a	n/a	-C	-C	-C	-C	-C	4	2	14
5c	Identify and enlist resources and support	-	-C	-	-	-	✓	-	-	-	-C	-	-	-	-C	-C	n/a	n/a	-	-C	-C	-C	-	1	0	19
5d	Discuss follow-up & plan for unexpected outcomes	✓	-	-C	-	-C	-	-C	-C	-C	*C	-C	*	*C	-C	-C	n/a	n/a	-C	-C	-	-C	-C	1	3	16
6. Responding to emotions																							*Total*	*10*	*7*	*52*
6a	Notice clues and acknowledge patients' emotions	*	-C	*C	-C	*	✓	-C	-C	✓	-C	-C	✓	*	-C	-C	*	-	-	-	*	-	-C	3	6	13
6b	Explore emotions e.g. legitimation, validation	n/a	n/a	-C	-C	*	✓	-	-C	-	-	-	✓	-	-	-C	*	-	-	-	-C	-	-C	2	2	16
6c	Express empathy	✓	-	*C	-C	-	✓	-	-C	✓	-	-	✓	-	-	-C	✓	-	-	-	*	-	-C	5	2	15
6d	Provide help in dealing with emotions if appropriate	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0	0	0
																							Total	*10*	*10*	*44*
Total	✓	17	5	9	10	12	25	5	4	19	7	15	17	14	10	4	13	6	10	5	7	8	7			
	C	1	12	11	9	7	0	13	16	4	12	4	0	2	6	17	0	4	8	15	16	7	15			

✓ = performed by student; * = partially performed by student; [-] = not performed; n/a = not applicable; C = clinical educator interject

Appendix C-3: The Relationship Between CE's Talk and Students' PCC Score