Clinical Education of Speech-Language Pathologists in Remote Areas of Australia

Nanthini Kanthan

BSc Biomedical Science, MSLP

Faculty of Medicine, Nursing and Health Sciences

Flinders University

December 2016

CONTENTS

List of Figures

List of Tables

SUMMARY

The Speech-Language Pathology (SLP) workforce has continued to grow across Australia. There are challenges for Speech-Language Pathologists (SLPs) who are working in remote areas of Australia due to unique factors. Appropriate clinical education and training for working in remote contexts are part of the specifically focused efforts for many medical and nursing student cohorts, but not SLP as yet.

This original research used a mixed-methods design to explore the demography of the Australian SLP workforce and their current clinical education in tertiary settings. Australian census data was analysed to examine the workforce demography and trends to provide a framework to understand the nature of the workforce and to plan for it. SLP curricula outlines from Australian universities were obtained and semi-structured interviews with clinical educators completed to examine the current clinical education environment and perceptions of remote area practice. A pilot study was also completed in Northern Sweden using the same semi-structured interview format with health professional clinical educators including SLPs to provide a comparative view of clinical education in remote contexts.

Analysis of research data indicated that the SLP workforce in Australia is growing in remote areas with new graduates and early career SLPs and that clinical education for practice in the remote context is still in its infancy within the profession.

DECLARATION

I certify that this thesis does not incorporate without acknowledgment any material previously submitted for a degree or diploma in any university; and that to the best of my knowledge and belief it does not contain any material previously published or written by another person except where due reference is made in the text.

Signed

Date 19/12/16

Nanthini Kanthan

ACKNOWLEDGEMENTS

I acknowledge and thank my supervisors - Professor Adrian Schoo, Dr. Narelle Campbell and Professor Dean Carson - for their continuing encouragement, kindness, patience and guidance throughout this research process, especially in light of the added challenges of 'remote' practice.

I also recognise and thank all the interviewees in Australia and Sweden who so willingly shared their knowledge and experiences. I am very thankful for the opportunity to visit the Centre for Rural Medicine, Storuman (Sweden), organised by Professor Carson and Dr. Peter Berggren. To all my colleagues and friends from Storuman: I will always be incredibly grateful for your warm welcome and for allowing me to share in your community and your lives; for introducing me to *fika*, and the reindeers - that so often sprang into Christmas stories.

Thank you to Ms. Josephine McGill, Health Services Librarian, Alice Springs for her expertise with search parameters, databases and reporting systems that helped to explore and shape my research questions.

Thank you also to Associate Professor Kerry Taylor and the team at the Poche Centre for Indigenous Health, Alice Springs for welcoming me to share their space, knowledge, energy and enthusiasm for research.

And finally, there is nothing like the unwavering support of family and friends who continue to be family and friends, whatever the trials, tribulations and distances I journeyed! Thank you.

CHAPTER 1 – INTRODUCTION

Introduction

The primary role of clinical education is to produce practitioners who can perform effectively in the clinical situation (Pollard, Ellis, Stringer, & Cockayne, 2007). In the field of Speech-Language Pathology (SLP) there is a challenge in developing and implementing efficient and effective methods for teaching and assessing clinical skills. This teaching and associated assessment occur during clinical placements, as part of work-integrated learning, where students are provided with opportunities to apply the information learnt in the classroom to develop interpersonal skills, clinical reasoning and management skills (McAllister, 2005).

There are changing demands and expectations of the skills required by new graduates as work environments continue to change. SLP new graduates are entering the remote area workforce where there are difficulties filling vacancies and, in doing so, providing services to a uniquely different environment. There is evidence to suggest that the delivery of health services (including SLP services) in remote areas is likely to be substantially different to delivery in urban and even rural areas (Wakerman & Humphreys, 2011). The differences arise from the geographic, social, economic and cultural context of remote Australia, the clinical needs of people living in remote Australia, the ways in which services are delivered in remote Australia and the nature of the workforce who deliver those services.

This research defines SLP in view of service context and environment, clinical needs, workforce and clinical education. There is almost no literature available on remote SLP practice and clinical education to support the needs of remote practice for SLP. However, there is literature on remote clinical education for the medical and nursing professions, and on how the remote context impacts health and allied health professionals as a whole. By focussing on the broader context of remote practice and the clinical educational needs for the health professions in general, this research expects to gain a greater comprehension of issues, challenges and outcomes that can be explored for their impact on SLPs and their practice in remote areas.

SLP is a minority workforce within the health and allied health workforces. There is limited literature on the demography of the SLP workforce, particularly in a remote context. This research used a quantitative approach in utilising census data from the Australian Bureau of Statistics (ABS) to determine the demography of the SLP workforce in a five year census period from 2006 and 2011. By identifying and understanding the characteristics of this workforce and discussing them within the broader context of what is already known of other health disciplines and remote workforces (Carson, 2011) this research hopes to guide the development of specific strategies for remote clinical education for SLPs.

Clinical competence in practice is the aim of clinical education. Therefore, as work environments and their expectations of new graduates change, it follows that clinical education needs to be prepared to factor these changes into practice. Clinical education for allied health has evolved from medical clinical educational models (Prideaux, 2007). There is literature on remote medical clinical education that looks at practical and conceptual issues of remote practice; however, there is currently no literature on remote clinical education for SLP. Rural and remote focused organisations such as Services for Australian Rural and Remote Allied Health (SARRAH)[1] and Western Australia Country Health Services[2] have developed learning packages and resources for health professionals working in these unique environments. However, these learning packages and resources are not specific for SLPs.

Aims of this Research

The purpose of this research is to investigate and explore what remote SLP is in view of service context and environment, clinical needs, workforce and clinical education. As there is little research on this subject, there is a gap in the existing literature for this thesis. This thesis aims to provide a base by describing the current remote SLP workforce, expressing remote practice from the perspective of university training programs, identifying knowledge gaps, and investigating ways to develop appropriate models for clinical education for SLP in remote areas. This research does not address clinical supervision or professional support for clinical educators in remote areas. This research acknowledges and discusses educational strategies as part of the rural educational pipelines for health professionals, however the focus, is clinical education currently included as part of skills, knowledge and competency training by a tertiary institution to produce qualified SLPs.

A concurrent mixed methods research design is used. Drawing on recent work in transformative mixed methods (Cresswell, Plano-Clark, Gutmann & Hanson, 2003); quantitative and qualitative data were collected regarding the Australian SLP workforce, current Australian SLP entry-level clinical education curricula, and perceptions of remote SLP practice. The rationale for using a transformative lens is to "help organise thinking about how evaluation can serve the interests of social justice" (Hesse-Biber & Mertens, 2013). Mertens and Wilson (2012) state that the transformative methodological approach is able to capture the complexity of the phenomenon studied as well as the cultural context it is based on. In relation to this study, it is to organise the inclusion of quantitative data of the SLP national and remote workforce and the qualitative data of stakeholders' perceptions (SLPs, clinical educators/course coordinators of universities) in clinical education needs for practice in a remote context. The advantage in combining both quantitative and qualitative data is to better understand the problem by converging quantitative workforce

[1] http://sarrah.org.au/
[2] http://www.wacountry.health.wa.gov.au/

data and trends together with qualitative interview data that describe this area (Behan, Condon, Milićević & Shally, 2009; Cresswell, 2003). Therefore, the application of a transformative mixed methods approach allows examining this phenomenon to discuss social changes for speech-language pathology practice in remote areas. The inclusion of a qualitative dimension is critical in order to establish a dialogue between the researcher and community members which, in this case, are the SLP clinical educators/course coordinators and SLPs in remote practice (Hesse-Biber & Leavy, 2005).

The research aims of this study are to:

- Identify and describe the demography of SLP in Australia – especially those working in remote areas - to explore the human geography of this workforce;
- Investigate if remote context practice is included in the current undergraduate or post-graduate curricula for SLP clinical education in Australia;
- Investigate the perceptions on remote area practice as part of clinical education by interviewing university clinical education program co-ordinators; and
- Discuss future development of appropriate clinical education strategies for remote SLP practice to cope with the changing nature of health service provision, work environments and workforce.

Background to the Research

SLP in Australia

SLPs are tertiary trained health professionals who diagnose and treat communication and/or swallowing difficulties. SLP began in Australia in 1939 with the first SLPs graduating from the University of Queensland in 1944. Initial SLP practice included the assessment and treatment of a variety of speech, language and communication difficulties and disorders from lisps and stuttering to poor literacy. The field became more health needs orientated when it began to encompass swallowing disorders (difficulties in eating and drinking) around the late 1970s. A 2015 Speech Pathology Australia (SPA) position paper on 'Scope of Practice' noted that SLP practice had extended to service provision in a wide range of contexts including hospitals, rehabilitation centres, aged care facilities, preschools, schools, universities, special needs and disability centres, community health centres, mental health services and from 2012, juvenile detention centres.

There are two pathways into the profession via accredited university courses – undergraduate entry at a Bachelor or Honours level and, from 2000, graduate entry at a Masters by coursework level. There are 15 universities in Australia that offer 20 SLP courses; six solely at Bachelor entry level, four solely at Masters level and five offering both pathway courses as seen in Table 1 below:

Table 1: List of Australian University SLP qualification courses

University	Course
Australian Catholic University	Bachelor of Speech Pathology
Central Queensland University	Bachelor of Speech Pathology
Charles Sturt University	Bachelor of Speech Pathology Master of Speech Pathology
Curtin University	Bachelor of Speech Pathology Master of Speech Pathology
Edith Cowan University	Bachelor of Speech Pathology
Flinders University	Bachelor of Speech Pathology Master of Speech Pathology
Griffith University	Master of Speech Pathology
James Cook University	Bachelor of Speech Pathology
Macquarie University	Master of Speech Pathology
La Trobe University	Bachelor of Health Science and Master of Speech Pathology
Melbourne University	Master of Speech Pathology
Newcastle University	Bachelor of Speech Pathology
Southern Cross University	Bachelor of Speech Pathology
University of Sydney	Bachelor of Applied Science (Speech Pathology) Master of Speech Pathology
University of Queensland	Bachelor of Speech Pathology Master of Speech Pathology

Training in SLP includes clinical knowledge and skills in all areas of general practice for adults and children. This is the assessment and management of a variety of communication and/or swallowing difficulties due to developmental delays, stroke, brain injuries, cleft palate, learning disability, intellectual disability, dementia, cerebral palsy and hearing loss amongst others. Specialist or advanced practice includes the areas of ventilated and tracheotomised patients in intensive care units, head and neck cancer patients post chemotherapy and/or radiotherapy; and infants with feeding difficulties from neonatal intensive care units to paediatric wards.

The demand for SLP services continues to grow across early childhood settings, education, health, justice and most recently across the residential aged care sector (Health Workforce Australia[3]; SPA, 2015). In order to meet this demand, high-quality and effective clinical education for SLPs must provide a well-qualified workforce.

Clinical Education

Clinical education is an important part of the SLP course and it is embedded into the university course curriculum. Clinical education provides a supervised environment where the student can apply and incorporate their theoretical knowledge of communication and swallowing disorders in a workplace setting to patients seeking SLP assistance. It thus requires integration and application of skills and knowledge from the course in a practical way. Clinical education is where students undertake clinical placements to complete practical skills with patients/clients under the supervision of a clinical educator – a qualified professional SLP. As with other health educational courses, SLP clinical education programs aim to evaluate the competencies of the students in delivering evidence based clinical practice. The profession assesses student competence using the nationally developed Competency Based Occupation Standards (CBOS) (Ferguson, 2005; SPA, 2001).

Continuing Professional Development for SLP

Continuing Professional Development (CPD) is a professional obligation for health professions to enable them to maintain, develop or increase professional knowledge or skills. Mandatory compliance to CPD is usually a requirement for membership and licence to practice with professional bodies. SPA[4] is the national professional body for SLPs that offers a Professional Self-Regulation (PSR) program which links to certification and assists in developing improved status and credibility for the profession. In urban or metropolitan areas, SLPs tend to specialise into broad areas of practice – adult or paediatric service provision, e.g. working with stroke patients on a rehabilitation ward or with children in a community health setting. Further specialisation occurs in the workplace as identified by the SLPs or the work unit, e.g. working with babies with cleft palates. CPD can involve any relevant learning activity and many SLPs use CPD as a pathway to specialise or maintain clinical competence in particular areas of interest or need.

These two learning pathways (Clinical Education and CPD) are relevant to this research in that they provide educational opportunities to target clinical practice for a remote context. As SLP increases its service provision due to industry demands and expands its scope of practice and knowledge, it follows that

[3] http://www.health.gov.au/internet/main/publishing.nsf/Content/health_workforce_data

[4] https://www.speechpathologyaustralia.org.au/

stakeholders (academic/educational institutions, government, workplaces) need to address or develop appropriate standards for clinical education that will support clinical practice in various contexts.

Different service context, clinical needs and workforce

1. ***The remote service context is different***

   There are different constraints and enablers to accessing services in remote areas. Issues of accessible and affordable services are especially relevant in remote Australia where there are extremely high risk populations. There are higher proportions of Indigenous people in remote areas with populations spread across locations in isolated communities with different cultural, educational and economic backgrounds (Wakerman & Humphreys 2011). As living areas and settlement patterns are dispersed across large distances, there is a high cost to deliver required health services. There is also low accessibility to health services, creating a need to deliver and access services (including SLP services) differently to manage the cost, distance and socio-cultural context for remote environments. This is different to a rural and urban context because health services and supporting infrastructure are generally more accessible in a physical sense for most populations.

2. ***The clinical needs and demands in a remote context are different***

   Health service provision in a remote context incurs different clinical needs and demands than in a rural or urban context. The health outcomes for remote communities are poorer than those for rural or urban communities (Dussault & Franceschini, 2006). There are also higher risk factors for many chronic diseases in remote populations with increased risky health behaviours such as high rates of cigarette smoking, alcohol consumption and obesity. Added to these are external stressors such as environmental conditions (climate change, natural disasters, extreme weather), economic (resource industry growth or downturn) and psychosocial factors (lifestyle, social cohesion) that challenge living in remote communities and impact on health behaviours including physical and mental health (Judd & Humphreys, 2001).

   To provide a clinical service in this context requires an extended approach that encompasses broad and specialist skills and knowledge. This is not unique to SLP – other health professions find that the unique challenges of remote work create different preparation and support for the workforce (Wakerman & Humpreys, 2013). Increasing sub-specialisation of the workforce is impacting on services in rural and regional areas where generalist skills are required. Doctors face this (HWA, 2008) and General Practitioners (GPs) in particular have, therefore, made rural and remote medicine a speciality pathway that provides training for, and recognition of, the additional skills and competencies demanded by

remote work (ACRRM[5]). There is currently no research on the meaning of remote specialisation for SLP. However, this may need to be addressed as there are many similar factors in the generalist skills that are needed for a specialist (remote) environment.

3. The remote context requires different models of service delivery

The remote context demands the provision of different models of service delivery such as tele-health, hub and spoke, community based rehabilitation, community engagement and generalist allied health assistant workforces. However, these are models of service delivery that require a more specialised health workforce to design, develop, implement and evaluate evidence-based clinical practice in the remote context. Models of service delivery should not be seen as strategies to replace, reduce or relegate the current professional SLP workforce, but should be integrated into the core of clinical education curricula for remote practice as they reflect the realities and trends in remote environments.

Remote practitioners usually have limited clinical diagnostic support and professional expertise support in the remote workplace. They may also face providing different treatment protocols depending on service availabilities and cultural understanding. They need public health knowledge/awareness and have increased responsibilities for the assessment and management of patients, usually due to being the sole clinician or working in a very small team of clinicians. These challenges have been reported by the other health professions such as medicine, nursing and social work (Russell, Humpreys & Wakerman, 2012). Recommendations to manage these issues and challenges include explicit education in how to manage technology and networking to provide services and how to adapt interventions and engage with the community. These recommendations are great opportunities for clinical education in the remote context for health professionals including SLP.

4. The remote workforce has different needs

Difficulties in retaining and recruiting are well documented for the remote context. The reported lack of professional support and education was one of the main factors cited by allied health professionals for leaving the remote workplace (Bent, 1999; Campbell, McAllister, & Eley, 2012). Other professions such as nursing and medicine have found that providing context specific clinical education (or CPD) helps to address this by giving practitioners confidence to work in that context and implying a value attached to that work. Tesson, Curran, Pong, and Strasser (2005) also noted that relevant clinical education helps address capacity, capability, succession planning, recruitment and retention.

It can also help to reduce the costs of remote service delivery because the alternatives to a resident well-trained workforce are expensive. The costs associated with fly-in and fly-out models are not

[5] http://www.acrrm.org.au/about-the-college/about-rural-and-remote-medicine

financially sustainable and the option of not providing a service is increasingly expensive, socially, culturally as well as financially.

Health workforce shortages together with dealing with a highly mobile, young, less experienced workforce is a national problem, especially in remote regions (Russell, Wakerman & Humpreys, 2013), which makes the provisions of sustainable clinical education challenging. This issue is acknowledged by other health professions (medicine, nursing) and by academic institutions (James Cook University, Flinders University) in their design and development of a specific curriculum or component for remote practice. These curricula reflect the different service contexts and clinical needs of the remote population and the challenges of the remote environment. The challenges inherent to health issues and service delivery for the remote context provide clinical education opportunities to treat a wide range of health problems and develop an expanded practice scope of clinical skills.

To follow the model of GPs and nurses in particular, a remote SLP would have nationally accredited skill sets and qualifications, credentialed to provide primary care, hospital, rehabilitation and population care as well as one or more areas of advanced/specialist skills in remote practice. This is in line with developments in other health professions that provide remote specific service and clinical education (Auer et al., 2013; Lin, Beattie, Spitz, & Ellis, 2009; Mpofu, Daniels, Adonis, & Karuguti, 2014).

Significance of this research

The purpose of this research is to examine the context for clinical education of SLPs working in remote Australia and to investigate how the current clinical education systems attend to the particular issues involved in remote service delivery. Relevant issues include: the remote context itself (distance and isolation, etc.), clinical needs of remote clients (including indigenous client groups), models of service delivery used in remote areas, and the unique characteristics of the remote area SLP workforce (e.g., age structure, staff turnover). The need for clinical education specifically preparing health professionals for practice in remote areas has been identified in many other professions (Crowe & McDonald, 1998; L, Kirkham, & Harwood, 2005), although it has received little attention in SLP. This research will describe the demography of SLP in Australia and review the literature on clinical education for SLP remote practice. It will also examine the preparation for remote practice currently provided in Australian SLP tertiary courses and investigate the perceptions of health professional clinical educators about the clinical education preparation required for remote areas from both an Australian and international perspective.

Synopsis of thesis

This first chapter provides an overview of this research project, beginning with a description of SLP as a clinical profession and the clinical education systems developed to support SLP in Australia as well as the uniqueness of the remote context for service delivery, clinical needs and workforce.

Chapter Two describes the demography of the current SLP workforce in Australia including the characteristics that differentiate it from the remote SLP workforce. The characteristics of age, gender distribution and educational qualifications are explored with a view of identifying issues that need to be considered and their implications for future education and planning of the SLP workforce. Remote areas will also be discussed and defined.

Chapter Three reviews the current literature regarding clinical education within the remote SLP context. A systematic review of this literature revealed limited research in this area. Other health professions such as nursing and medicine have provided research in rural and remote area practice that have changed the way clinical education is developed and provided. Allied health professionals tend to be grouped under one umbrella. However, significant differences within each of these disciplines warrant the importance and need for a study in this area to be undertaken specific to SLP. The chapter then summarises the research into remote practice and remote-oriented clinical education that has been conducted in other health professions. The state of research into SLP in remote Australia is summarised, and the gaps in knowledge about clinical education for SLP working in remote areas are identified.

Chapter Four investigates the current SLP clinical education program in Australian universities in view of remote clinical education, using a two-pronged approach: (1) a quantitative audit of curriculum syllabus/topic/subject outlines for the inclusion of specific remote speech pathology practice; and, (2) a qualitative approach to gather and interpret data from semi-structured interviews regarding the views of clinical educators on the importance of remote specific clinical education.

Chapter Five describes a pilot study from Northern Sweden in regards to clinical education for remote areas that also serves as a comparison for the Australian study. Northern Sweden has similar challenges in the provision of health services in remote areas and in adequately providing health professionals remote specific clinical education.

Chapter Six summarises the findings from this research and discusses limitations identified. It considers the conclusions that can be drawn from this research in terms of the values and benefits for the SLP profession and workforce, educational institutions, workplaces and future policy in developing and supporting a well-qualified workforce. A conceptual model is used to discuss recommendations and directions for future planning and research.

CHAPTER 2 – DEMOGRAPHY: WHO ARE WE?

Introduction

The purpose of this research is to examine the context for ongoing and continuing clinical education of SLPs working in remote Australia. Understanding the context for clinical education requires developing an understanding of the nature of the remote SLP workforce – demographics, workforce turnover rates, sectors of employment and existing qualifications. Not only does this support and provide a safe and effective working environment for health professionals; these characteristics are likely to influence who might access continuing education, and the ways in which it should be delivered. For example, high rates of workforce turnover might limit possibilities for professionals to access 'long form' continuing education, and clinicians at different life courses and career stages may have different familiarity and acceptance of modes of delivery such as online or residential intensives (Bell & MacDougall, 2013). These issues have been demonstrated as important in the context of remote Australia, particularly when it comes to working with Indigenous communities (McConnell, 2013) and in the understanding that remote and vulnerable or disadvantaged communities deserve to have their health needs met by a well-trained and well-supported health workforce.

Despite being a comparatively small profession in Australia (there were an estimated 6,800 SLPs and audiologists according to the 2011 Census, for example, compared with 9,300 occupational therapists, 11,000 dentists and 16,000 physiotherapists), SLP continues to become an increasing popular choice for study. There are two university education pathways to obtain a qualification in SLP: undergraduate and postgraduate. All states except Tasmania and the Northern Territory provide SLP courses at either an undergraduate entry level (four years Bachelor degree) or graduate-entry level (two years Master degree). SPA expects demand for SLP to exceed supply due to effects of an ageing population, growing support and funding for disability services such as the National Disability Insurance Scheme, improved premature infant mortality and the increase in early detection and diagnosis of speech, language and communication disorders (SPA, 2015).

The SLP profession is still a relative newcomer to the health professions in Australia with the first SLP clinic documented as opening in 1931 and the establishment of the professional association beginning in the 1940s. Tertiary training for the profession was established by 1978 with five training programs. In 2016, there are 15 universities offering 20 SLP courses. Whilst there has been a boom in the last decade with the dual-entry pathway as an option to enter the profession, this is being done largely without knowledge of and input from the workforce in terms of addressing remote area shortages and meeting the SLP practice needs of working in remote areas.

There is geographic clustering of the SLP workforce in urban areas and a shortage in remote areas (HWA, 2014) similar to all other health and allied health workforces in Australia. In the context of this paper, there is a particular dearth of research examining SLP and its workforce in remote Australia (Campbell et al., 2012). While many other professions have been paying increasing attention to rural and remote focussed professional education over the past twenty years (Onnis & Pryce, 2016), SLP education programs remain only poorly informed about the remote context in particular.

What is remote?

The concept of geographic remoteness as distinct from 'ruralness' is becoming an increasingly important consideration in health workforce service planning, capacity building and delivery. Wakerman (2004) clearly distinguished remote practice from rural practice based on sociological, historical and practice characteristics. The nature of the workforce as socially and spatially isolated, requiring a broader scope of practice and, at the same time, tending to be less experienced and showing short lengths of stay in specific locations were identified as important 'remote' attributes. Carson and colleagues (2011) emphasised that 'remote' is not just an extreme example of 'ruralness', but that it is a distinct geographical setting requiring different knowledge and planning approaches. It would then follow that clinical education needs for those working in these rural and remote areas would similarly require alternative approaches.

There are many different definitions of rural and remote depending on whether they are based on criteria of population density, location or distances from urban or metropolitan centres, availability, size of communities or accessibility and costs of services. The Australian Bureau of Statistics (ABS) released the Australian Standard Geographical Classification (ASGC) in 2001 to group areas with similar characteristics. In 2011, the ABS included the remoteness area (RA) classification used in Figure 1 (See Chapter 2) to define regional areas in terms of physical distance of a location from the nearest urban centre based on population size. This model is used as it provides recognition that smaller communities are more vulnerable to workforce pressures.

The geographic spread of the SLP or allied health workforce does not reflect the distribution of the population. There is a severe shortage in remote areas where 3% of the population lives (Australian Institute of Health and Welfare [AIHW], 2008).

Remote areas have a number of unique issues:

1. Specific health and care challenges – high health needs, higher mortality and illness, higher burden of disease and reduced access to and use of health care services (AIHW, 2007);
2. Specific populations – higher Indigenous populations and communities that are under-resourced, dispersed across large areas and who are highly mobile (Stevenson, et. al., 2001);

3. Specific health workforce challenges – the maldistribution of health professionals, high turnover, difficulties in recruitment and retention and a tendency to a less experienced workforce (National Rural Health Alliance [NRHA], 2011); and
4. Specific remote practice challenges – professional isolation, large caseloads with broad and varied range of presentations, limited resources and services, limited access to experienced colleagues onsite, various overlapping models of service delivery and cross-cultural practice (Bent, 1999; Wakerman, 2004; Lenthall, et al., 2009).

Each of these unique issues needs to be considered in the design of SLP education. Of particular concern to this paper is the adequate and continuing education of SLPs working in remote Australia which has been found to be extremely important even when professionals have had 'remote' exposure during initial qualification (Dunbabin & Levitt, 2003). Hence, there are program initiatives to address this such as online SARRAH[6] modules which address key issues to practice in rural/remote settings. However, lack of ongoing government funding has resulted in limited further development on these modules and an end of a state-wide program (Schoo, Stagnitti, & McNamara, 2012) that provided online access to health professionals in various jurisdictions as well as SARRAH members to access key education for remote practice (O'Toole & Schoo, 2010).

Medical practitioners have long adopted a rural pathway or pipeline approach as an education initiative to address specific area practice. Tesson and colleagues (2005) reviewed the use of a rural pathway approach in three countries: Canada, United States and Australia; all facing similar issues of needing to address remote area practice for medical practitioners. They described various schools of education: 'Mixed/Urban' rural schools, 'DeFacto' rural schools and 'Stand Alone' rural schools adapting curricula to meet the need of remote area practice in curriculum and clinical education. The type of schools and their rural programs is not the key argument here; rather, it is that the medical profession has clearly identified, designed and supported an approach to make medical practice more specific to the environment its practitioners need to be recruited to, retained in and adequately supported and trained to meet the health needs of its inhabitants. The remote specific education is targeted towards students and junior clinicians obtaining their early qualifications in rural areas to increase the likelihood that sufficient individuals will continue to practice in remote areas. It also increases the workforce pool of suitably trained clinicians in remote practice. The issue here is that the medical discipline only has had far better funding for this progress in the rural/remote pathway with government and tertiary collaboration to facilitate rural clinical schools. Allied health disciplines on the other hand, are only gradually being acknowledged as requiring similar collaborative pathways.

[6] http://sarrah.org.au/content/transition-remote-and-rural-practice-online-modules

Remote Area Nurses (RANs) provide and coordinate a range of health care services in remote and dispersed populations (Lenthall, et al., 2009). Similar to the remote SLP workforce, the RAN workforce is primarily female (89% as per census data in 2006), with a very high turnover. The additional education and qualifications necessary for remote area nursing was recognised and has been available for over 10 years (Lenthall, et at., 2009) in order for RANs to be prepared for their role. The nursing profession in Australia has acknowledged that there will be a critical shortage of nurses (as well as appropriately qualified nurses) for remote areas as the current workforce ages (Bragg & Bonner, 2015). Remote area nursing is identified as an advance or extended skill for practice, and is available as a postgraduate qualification for nurses. Lenthall and her colleagues (2009) stated that many nurses in remote areas are simply not able to complete additional training due to the complexity of the work environment. However, as the current nursing workforce ages, the new workforce will have to be educated adequately at initial qualification level as this is where the next remote workforce will come from. Like in medicine and nursing, the demographic characteristics of the SLP workforce in remote Australia is likely to impact on the context for continuing education.

The aim of this study is to describe the demography of the current SLP workforce in Australia, including the characteristics that differentiate it from the remote SLP workforce.

Method

Data were drawn from the 2006 and 2011 Australian Census using the TableBuilderPro online application[7]. While there are many challenges with using census data for health professional workforce analysis (Carson and Porter, 2013), the absence of a compulsory registration system in Australia for SLPs means that the Australian Census is the best available source of information. Challenges with using census data in this case include: that respondents nominate their own occupation so the data are subject to misclassification; that SLP and audiologists are included in the same occupational classification; that census data is made confidential, meaning for example, that information cannot be retrieved for locations where there were fewer than 3 SLPs living or working; and that there are changes in geographical classifications between each census. This latter challenge includes a very substantial change from the Australian Standard Geographical Classification (ASGC) used in 2006 to the Australian Statistical Geography Standard (ASGS) used in 2011.

[7] http://www.abs.gov.au/websitedbs/censushome.nsf/home/tablebuilder

Demography design

In the absence of prior research, the definition of remote practice needs to be considered first.

The ASGC was the hierarchical framework providing seven classification structures used for statistical geography from 1984 – 2011 (ABS, 2014)[8] [9]. These were the Main Structure, Statistical Region Structure, Local Government Area Structure, Statistical District Structure, Urban Centres and Localities, Section of State and Remoteness Structure. The Main Structure and the Statistical Region Structure cover the whole of Australia without gaps or overlaps. The Local Government Area and the Statistical District Structures cover only parts of Australia. The structures are hierarchical, in that different structures have different numbers of levels. Each hierarchical level is made up of one type of geographical spatial unit. The spatial units at each higher level are aggregations of the spatial units at the previous lower level.

This paper uses the Australian Standard Geographical Classification – Remoteness Area (ASGC-RA) classification as it is used by the ABS and was the system in place when the census data (2006 – 2011) for this research was collected and analysed. Figure 1 shows the remoteness area boundaries according to ASGC-RA. This system was developed in 2001 by the ABS to allow quantitative comparisons between 'city and 'country' Australia (McGrail & Humphreys, 2015). The aim of which was to geographically divide regions in Australia that share common remoteness characteristics for statistical purposes (ABS, 2011).

The Modified Monash Model (MMM) was introduced in 2014 as a new classification system that categorises metropolitan, regional, rural and remote areas according to geographic remoteness and town sizes (Mason, 2013) to address health workforce services. However, this system is not used by the ABS and was not adapted for this research.

[8] http://www.ausstats.abs.gov.au/ausstats/subscriber.nsf/0/32FBEDE1EA4C5800CA25791F000F2E1C/$File/att98dqt.pdf

[9] http://www.ausstats.abs.gov.au/ausstats/subscriber.nsf/0/AA02EA096C90562ACA25791F000FCCFE/$File/12160_asgc_app_2.pdf

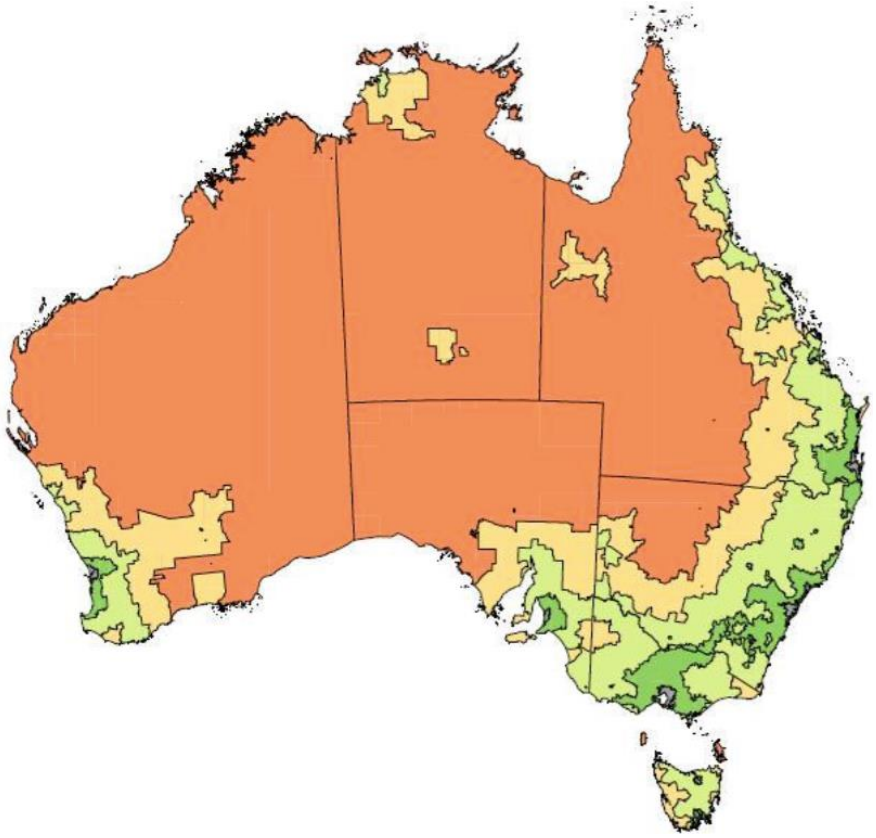


Figure 1: Remoteness Area (RA) Boundaries for 2006

Table 2 lists the remote areas of Australia from the ABS 2011 Statistical Level Area Three (SLA3) standardised regional breakup. The ABS criteria describe SLA3s as functional regional areas that have considerable flexibility in defining meaningful regional areas rather than having a definition based solely on population. In using this criterion, Darwin was not included in this research as part of the SLA3 remote area list as it is vastly different to other remote areas such as Alice Springs or Goldfields in terms of population size and distance or access to nearby larger centres. It would follow that the issues of resource allocation, isolation, and health care provision in the "smaller" remote areas are different to a "larger" remote area.

Table 2: List of remote areas (SLA3s) for 2011

Alice Springs	Katherine
Barkly	Kimberley
Bourke - Cobar – Coonamble	Limestone Coast
Broken Hill and Far West	Lower Murray
Daly - Tiwi - West Arnhem	Mid North
East Arnhem	Mid West
Esperance	Mildura
Eyre Peninsula and South West	Outback – North
Far North	Outback - North and East
Gascoyne	Outback – South
Gippsland – East	Pilbara
Goldfields	West Coast
Grampians	

Data Collection

The demography of the SLP workforce in a five year period from 2006 and 2011 was analysed using census data from the ABS. TableBuilder Pro was used to analyse the data.

The research focused on the key workforce variables identified:

- gender and age (ten year brackets) distribution;
- educational qualification (undergraduate or postgraduate);
- employment sector (public or private); and
- (residential) migration in to and out of remote areas in the five years prior to the census.

It should be noted that some SLPs who work in remote Australia may not have been captured in the census data used in this research. This is because the census data identified remote SLPs by location of residence and therefore would not identify a SLP who lives in a non-remote location and provides fly-in/fly-out services to a remote region. Additionally, SLPs living in remote Australia may work across a large geographical area which includes remote and non-remote locations (Wakerman et al., 2012). Further analysis needs to be done on the impact of these issues on the characteristics of the workforce, but for this initial research, SLPs were considered to be part of the remote workforce if they simply lived in a remote area.

Characteristics were compared between the remote SLP workforce and the total Australian SLP workforce and between the remote SLP workforce in 2006 and the remote SLP workforce in 2011. Residential migration data (the census asked where you lived five years prior to census night) were not available for Remoteness Areas, so the research defined 'remote' as consisting of those larger census units for which migration data were available and in which there were sufficient SLPs to retrieve data which were entirely or substantially within the remote and very remote regions shown in Figure 1. For 2006, this meant a selection of SSD 'Statistical Subdivisions' and in 2011 SLA3 'Statistical Level Area Three' units. While the concordance is imperfect both to the RA classification and between the two census dates, in practice there were no SLPs living in the 'disputed' zones.

Direct government employers of SLPs tend to be hospitals, community health centres/services, care facilities, and schools. The private sector would include private practitioners (as sole traders or contractors), small businesses, not-for-profit organisations/charities and private organisations which may nonetheless receive funding from government agencies. Furthermore, an SLP may work in both the private and public sector, but can only nominate one sector on the census form.

Data were analysed using Microsoft Excel. Given that the census is a population data set, tests of statistical significance of differences between sub populations (and between time periods) are not appropriate. Rather, the researchers were required to make assessments of important differences. Data are primarily presented as percentages of the population or sub-population, and migration rates are calculated as a percentage of the end of period (2006 for the 2006 Census and 2011 for the 2011 Census) population.

Results

Age and Gender Distribution

In 2006, as referred to in Figure 2 below, there were 4,950 SLPs in Australia of whom 93% (4,583) were female and 7% (367) male. The size of the SLP profession as a whole has grown within five years. In 2011, there was a 27% increase in the size of the workforce with a total of 6,796 SLPs in Australia. The gender balance, however, was unchanged with 93% (6,325) female and 7% (417) male SLPs.

The remote SLP workforce is even more female dominated. In 2006, there were a total of 86 SLPs in the remote workforce; 95% (82) females to 5% (4) males. In 2011, the remote workforce grew by 42% to 148 SLPs who were all female.

Nearly two thirds of the Australian SLP workforce was aged between 20 and 39 years in both 2006 and 2011. In contrast 52% of remote SLPs were in the 40-49 years age bracket and 30% in the 20-29 years age cohort in 2006. However, in 2011, nearly 80% of the remote workforce was aged between 20 and 39 years

(including 50% aged 20-29 years) and less than 10% were aged 40-49 years. The median age of the SLP workforce was 37 years in 2011 (ABS Labour Force, Australia)[10].

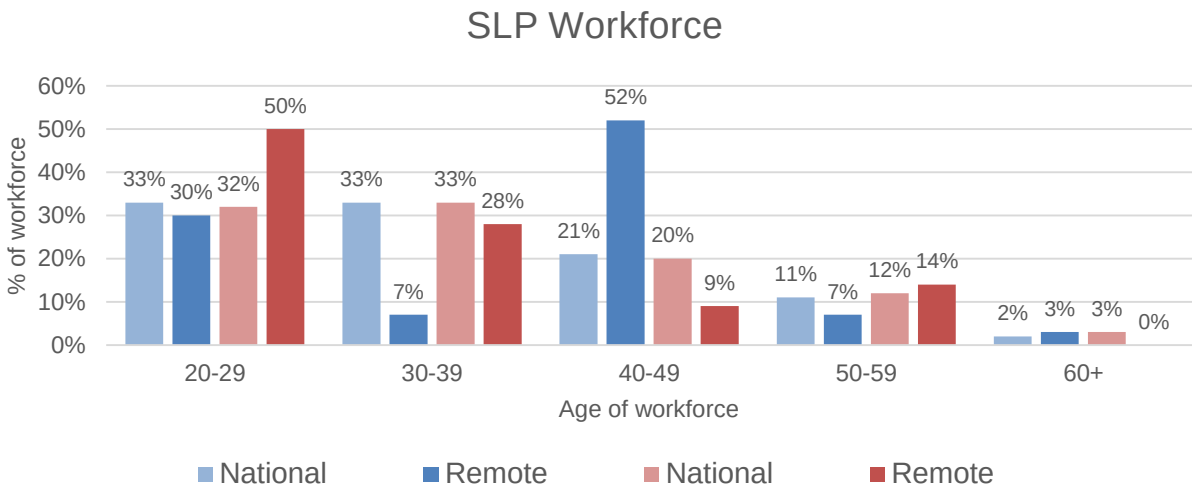


Figure 2: Number of SLPs in Australia by age in 2006 and 2011

Educational Qualifications and Sector and Employment

The majority of Australian SLPs qualify to practice with a Bachelor degree. This has remained consistent across the five years (70% in 2006 and 66% in 2011) and is also the case in the remote workforce (76% in 2006 and 78% in 2011) as seen in Figure 3.

There is however an increase in SLPs with postgraduate qualifications across the five years (20% in 2006 and 27% in 2011). The remote workforce saw a two-fold increase in the same period (8% in 2006 and 16% in 2011). Unfortunately the census does not distinguish between a graduate-entry qualification to the profession (i.e. Masters in Speech Pathology) and a postgraduate qualification (e.g. Graduate Certificate/Diploma, Masters in specialist fields, or PhDs). Given, however, that there are eight universities out of 15 offering SLP courses (see Figure 1.) with new Masters entry level qualifications within the last ten years, it does make sense that the growth in postgraduate qualifications could be attributed at least in part to this. Whilst the SLP workforce can be said to be well educated overall, with the knowledge that the postgraduate entry qualified SLPs already hold an undergraduate qualification, it needs to be still considered as less experienced within the field of SLP.

[10] http://www.abs.gov.au/browse?opendocument&ref=topBar

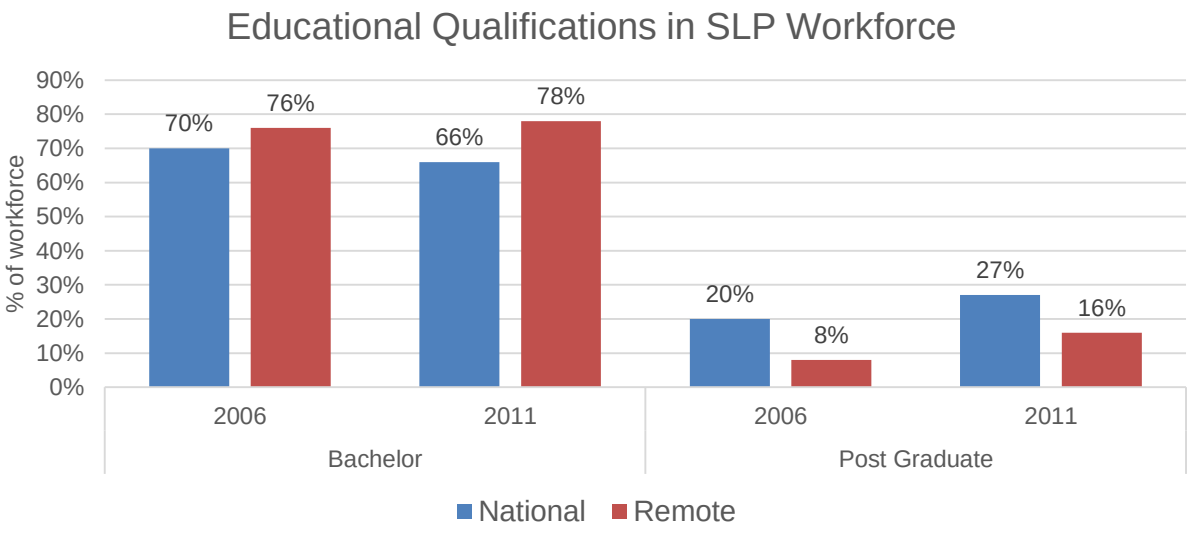


Figure 3: Educational Qualifications of SLPs in 2006 and 2011

Figure 4 indicates that the majority of SLPs in the national (59%) and remote (53%) workforce worked in the private sector in 2011. That was a significant increase in comparison to the national (25%) and remote (30%) SLP workforce in 2006.

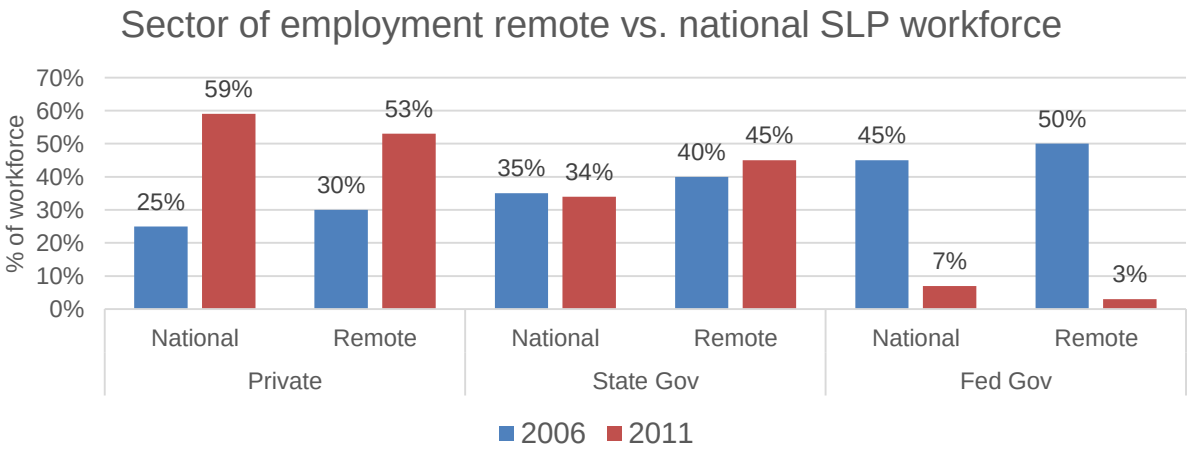


Figure 4: Number of SLPs in Public versus Private Sector Employment

Workforce Migration and Turnover

Workforce migration refers to the movement of workers in this instance, health professionals from one area to another. Workforce turnover refers to the percentage of health professionals who leave an area and are replaced by new health professionals. Table 3 captures the SLP and other health professional workforce migration and turnover in remote areas within the five year census period.

Table 3: Migration of SLPs and Health Professionals in Remote areas in a 5-year period

Health Professions	In Migration (nr. of people)	Out Migration (nr. of people)	Net Migration (nr. of people)	2011 Workforce (nr. of people)	Workforce Turnover
Podiatrists	23	19	42	32	131%
Occupational Therapists	74	67	141	161	88%
SLP and Audiologists	**67**	**50**	**117**	**135**	**87%**
Medical Practitioners	302	362	664	809	82%
Medical Imaging	68	72	140	175	80%
Dieticians	55	21	76	101	75%
Physiotherapists	109	86	195	260	75%
Pharmacists	125	71	196	333	59%
Dental Practitioners	45	31	76	133	57%
Midwifery and Nursing	1495	1621	3116	6888	45%

The turnover rate for SLPs was 87% within a five year period of 2006 to 2011 in remote areas, and appears to be within a similar range to other allied health and health professionals. Occupational therapists had an 88% turnover while physiotherapists and dieticians had 75%. The majority were within the range of 57 – 88% turnover within a five year period, including medical practitioners at 82%. It is important to note that the turnover figures need to be considered in regards to the size of the workforce. For example, in a small SLP workforce of 135 professionals, a net migration of 117 professionals is likely to translate into a larger 87% workforce turnover; whilst a larger Midwifery and Nursing workforce demonstrated a net migration of 3,116 professionals and resulted in a lower 45% workforce turnover. Overall though, it remains that there are significantly high workforce turnover rates in remote areas especially in the allied health professions.

Discussion

The quality of the demographic data in this study captures the overall picture sufficient to make some of the observations from the results analysed above.

Supply and Demand

There is an overall increase in the SLP workforce of 27% in the 2006-2011 Census period and, given the increasing number of university courses available and being established, this figure is likely to increase. While SLP is listed on the Professional Skills Shortage List[11], it is mainly in the remote areas that there is a shortage of SLPs. This highlights a discrepancy between the increase in the number of new graduates as evidenced by the creation of new SLP courses at tertiary institutions within the last ten years and the shortage of SLPs in remote areas. It contributes to the issues discussed initially regarding recruiting to remote areas. The difficulty in categorizing the exact unmet need for SLP services was articulated in the SPA 2014 Senate submission (SPA, 2015). Agencies (hospital, community health centres, NGOs) that provide SLP services have increasingly long waiting lists and no positions available for SLPs to be recruited to meet existing service needs. In remote areas, where there is great demand for services, the larger and more dominant health professions such as medicine and nursing have greater allocation of available resourcing (Russell et al., 2012).

Gender implications

The SLP workforce nationally and in remote areas is female dominated. As a significantly gendered profession there are associated workforce characteristics such as: a greater tendency for women to enter into part-time work as a way of combining the responsibilities of looking after children or elderly parents with paid employment. However, part-time work has also become increasingly important for single and married women without caring responsibilities due to individual preferences. In urban areas, backfills, maternity leave, short-term funding allocation are easily filled due to the clustering of available SLPs. In remote areas, part-time vacancies are likely to be even more challenging to be filled due to the financial burden of living in a geographically isolated area, access to professional development and other factors (Playford, Worthington, & Riley, 2013). National movement towards gender equity in the workplace may address some of the issues related with a significantly female gendered workforce in its ability to maintain workforce participation. This could be via flexible workplace provisions that include gender equitable access to parental and carer leave provisions and return to work programs.

[11] https://www.employment.gov.au/occupational-skill-shortages-information#health-and-social-assistance-occupations

Age distribution and implications

The SLP profession is young (20-39 years) and more so in remote areas (80% in 2011). This reflects a new graduate or early career SLP. This is a workforce that will need to be adequately trained and supported for positions in remote areas. It also shows a need for structured career pathways that would likely benefit potential remote SLPs in being attracted to remote areas. The movement of the older SLP workforce (40+ years) also needs to be considered further as there is significance in the loss of expertise and experience within this group.

Educational implications

The increase in SLP workforce numbers indicates that this is a growing area of interest whether as a school leaver entering at an undergraduate level or second careerists looking towards a new career pathway and entering at the graduate-entry qualification level. This has the potential for recognised specific remote context training within the curriculum that will lead to more confidence in searching for job opportunities in remote areas.

Employment Sector

Results show that the private sector employs 59% of the SLP workforce. However, this may not be an accurate representation since results could be skewed by those working in public and private sectors but only being able to identity one option on the census. There is a potential pool of SLPs that are qualified but who are not employed within their discipline (HWA, 2014).

Suitably trained and qualified SLPs appear reluctant to work outside of regional and urban centres. Again, this highlights the potential for structuring appropriate clinical education within tertiary curriculums to support the unique scope of practice that is required in remote areas. With recognised and valued training and career structures for remote practice, there is likely to be increased interest in remote area practice.

SPA highlights that the shift from public to private is likely to have flow on effects such as loss of career structure, supervision and loss of training and professional development opportunities, loss of clinical governance structures and communication and capacity building programs and services. SLP attrition rate is high at 13% nationally (HWA, 2014).

Migration/Turnover

Research has shown relatively high turnover over of allied health professionals in rural and remote areas. This probably reflects the nature of careers for allied health professionals (more fluid between jobs perhaps than nurses or medical practitioners) as well as the nature of allied health jobs (often contract/ short term), but may also suggest issues with retention and recruitment of remote allied health professionals. The

combination of early career SLPs and high workforce turnover suggests an opportunity to use remote areas as a clinical training environment.

Limitations of the study

There is no single data source available that adequately captures all information about the SLP workforce. The Australian Census collects data on a specific night, and groups SLPs together with audiologists due to overall low numbers. SPA maintains a database that is not mandatory for SLPs to register to practice. There potentially are also SPA registered SLPs who are not practicing members of the profession. However, in looking at all the available data and reflecting on similar issues faced by other health professions an overall picture is created for the SLP workforce.

In conclusion

Analysis of the SLP workforce provides information which may assist in the development of a strategic plan that would aid in the handling of issues relating to supply and demand of SLP services in remote areas, especially clinical education. So far, there has been no systematic, large scale social or demographic research into what takes place in the personal, professional and educational contexts of SLP.

To achieve a sustainable workforce we need to assess whether the existing information of the SLP workforce matches service demands and what needs to be planned for the future. To ensure a capable and qualified SLP workforce, we need education and training that may need to be more specific, flexible, responsible, recognised and sustainable.

Significant policy can be created following the implications of these findings which can assist in informing national efforts in developing sustainable clinical education models for remote Australia. Ongoing research will review and identify the clinical education needs of this workforce and suggest strategies that will better prepare SLPs to work in remote areas and to support SLPs already working in remote areas.

CHAPTER 3 – CLINICAL EDUCATION FOR REMOTE PRACTICE - A LITERATURE REVIEW

Introduction

There are challenges for SLPs working in remote areas of Australia to provide accessible, equitable, evidenced-based and efficient practice. Remote health service provision challenges are well established in the literature to include recruitment and retention of qualified health professionals which include SLPs. One significant barrier to recruitment and retention has been availability of adequately trained and supported health professionals in remote locations (Ducat, Burge, & Kumar, 2014). This goes both ways in having a sustainable base of trained health professionals in the remote location who are able to support new graduates or less experienced clinicians as well as ensuring adequately trained health professionals are entering the remote health service able to provide efficient services as constrained by the context.

It is a reasonable expectation that people living in remote areas have access to adequate and efficient health care. And that this health care provision is provided by health professionals with the appropriate skills, experience, training and competency (Wakerman, 2004). The challenge to recruit and retain appropriately qualified health professionals is a challenge in Australia and internationally, and more so in remote areas. This is the same for recruiting and retaining suitably experienced or 'fit for purpose' (Lin et al., 2009) SLPs in remote areas of Australia. One factor is the change in demography of the workforce with an increase in new graduate or early career SLPs looking for work and vacancies available in remote areas (Chapter Two). It is important then to ensure that the professional and clinical skills of new graduates or early graduate SLPs are appropriate to practice in remote settings. A method to ascertain this is to review SLP clinical education for remote practice that is currently available and that addresses the development of professional and clinical skills in this context.

Remote context

Approximately one third of the Australian population lives in outside metropolitan areas in rural, regional and remote areas. This represents 6.4 million people living in regional areas and 498,000 people living in remote areas (Australian Bureau of Statistics [ABS], 2010).

Health professional workforces in rural and remote areas are significantly smaller to meet the needs of these areas. This is reported nationally by Carey, Wakerman, Humphreys, Buykx, and Lindeman (2013) and internationally by Gupta, Zurn, Diallo, and Dal Poz (2003). There is no research for SLP at the moment for what is needed in remote practice. However, other health professions in allied health, law and education have researched this area and suggest that remote practice is different and that the skills and knowledge

required for remote practice can be taught (Wakerman & Humphreys, 2011). While the allied health professions make up 18% of the health workforce (AIHW, 2012) there is limited research on the access and distribution of the allied health workforce in remote areas of Australia. Most research has focused on addressing the health workforce shortages via the recruitment and retention of medical and nursing personnel (Wakerman, 2004). Even so, in researching the literature available for medicine, nursing, psychology and allied health as a group, there are similarities identified for remote areas practice.

Issues in remote practice

Australia has an ageing population and the proportion of the population aged 65 years and over is increasing in comparison to those of working age (15-64 years). This is known as the old age dependency ratio. In remote areas there is a lower old age dependency ratio, which reflects the higher indigenous population and also the migration of younger people to these areas for employment (ABS; Australian Institute of Family Studies [AIFS])[12]. There are many issues in the provision of services to remote areas. One of the defining issues is accessibility to services. In remote areas, services such as health, employment support and infrastructure, telecommunications, financial and social (e.g., housing, disability services or family assistance), education (secondary and tertiary) are difficult to access. There are also the limitations of affordability and reliability of transport or appropriate services in these areas, as well as the cost and or distances of accessing these services (Carson, 2011).

Issues specific to the health profession in remote areas are poorer access to primary health care and aged care as well as poorer health outcomes. Populations in remote areas have greater risk factors such as poor socio-economic status and personal risk factors for health. There is also reduced availability and access to health practitioners such as doctors, nurses and allied health and to primary, diagnostic and specialist care services to remote populations.

Themes in literature suggest three main areas presenting challenges in remote practice:

- Environmental issues
- Cultural issues.
- Professional issues

Environmental issues

Distances in remote areas represent challenges (Wakerman & Humphreys, 2011). Also, in remote areas there are poorer health related infrastructure, poorer housing, less secure and more expensive access to fresh food and water (AIFS). Barriers to service delivery include harsh climates and vast geographical areas

[12] https://aifs.gov.au/facts-and-figures

for service delivery. Biddle and Wilson (2013) noted an important feature of many Indigenous households in Australia is the significant amount of mobility that may affect access to and access of services.

Cultural issues

More than two percent (2.4%) of Australia's population is Indigenous, with a geographic distribution of 64% in remote areas. Barriers such as discrimination and lack of cultural responsiveness by health and human services as well as lack of access to interpreters or poor use of interpreters can affect health practice (Weech-Maldonado, Elliott, Pradhan, Schiller, Hall, & Hays, 2012). In remote areas there can also be extremely diverse migrant communities with culturally and linguistically diverse backgrounds (CALD) – which may present challenges in engaging these communities, and providing appropriate support and health education. Thompson, Chenhall, and Brimblecombe (2013) described the need for remote area training for staff for integrated and effective services. Appropriate liaison and clear communication regarding therapy objectives and programs is essential to participation, involvement and favourable outcomes (Mak, Plant, & Toussaint, 2006).

Professional issues

The major professional issues in remote areas are linked to:

1. ***Knowledge/skill***

   Health professionals in remote areas can be required to have the skills to manage a wide range of diagnoses (ACRRM). Similarly, allied health professionals in remote areas may be the sole representatives of their profession/discipline.

2. ***Networks & access/resourcing***

   O'Toole and Schoo (2010) reported that the greatest difficulties identified by allied health professionals in central Australia related to lack of supportive management systems resulting in high staff turnover as well as access and affordability to travel to professional development opportunities. Bent (1999) and Iacono, Johnson, Humphreys, and McAllister (2007) have described that the lack of career pathways, varied employment, professional contact, a view that city experience is more highly regarded, limited networks of professional support, professional isolation in practice, provision of a wide range of services to diverse client groups, high client to therapist ratio with limited service providers, reduced access to resources, equipment and professional development are all factors that affect health professionals in remote areas.

3. ***Staffing***

   Feedback from junior doctors presented a range of barriers and issues related to remote practice (Brodribb, Zadoroznyi & Martin, 2016). There was significant level of anxiety experienced and feelings

of being much less prepared. They felt isolated due to the larger distances from major centres and rarely had any advice or assistance available on-site. Financial concerns were also raised. Positive aspects were reported however, most did have to manage negative experiences. The primary issues were that the doctors had limited clinical experience and no onsite support or supervision. The doctors were also required to work within systems with which they were not familiar.

4. ***Career pathways (in and out of remote areas)***

   In allied health professions, remote area practice is not recognised or acknowledged formally (via qualifications) as a separate or specialised discipline. There are also no structured career pathways in remote area practice such as nursing which sees the RAN post graduate qualification as a specific additional qualification to progress in a career structure that is compensated with additional salary or professional level increment.

Clinical education for remote practice

There is no research that guides clinical educators to make informed curriculum decisions especially more so within the newer professional field of SLP and remote services. A well-trained SLP workforce is important is providing high quality care for the population. A well-trained SLP workforce that possesses a unique range of clinical roles and responsibilities would be beneficial in providing accessible care that matches population needs. Essentially there should be enough SLPs in the right places to provide safe, effective and culturally appropriate SLP services.

There is a recognized shortage of SLPs in Australia (Professional Skills Shortage List). Shortages have consequences for service delivery as well as clinical education. Skills needed for future settings include learning routines of clinical practice, awareness of the health or educational workplace politics, and the ability to develop relationships with staff and patients. Workforce recruitment strategies have not taken into account the preparation and training requirements that impact on SLPs and in particular new graduate or early career SLPs.

One strategy employed by the medical profession to practice in rural and remote areas is the “rural pipeline”, which recruits students from non-metropolitan areas and delivers education and training in these (rural and remote) regions with a rural curriculum that provides exposure to the practice context (Worley & Murray, 2011). This rural pipeline or “rural training track model” (Dyck & Hardy, 2013) has also been used in Canada for psychology (The Rural and Northern Program) as well as family medicine (Strasser, Hogenbirk, Minore, Marsh, Berry, Mccready, & Graves, 2013). The University of Manitoba’s clinical psychology internship involves a full year of specialised “rural” training with emphasis across the breadth of services to become competent in “general practice” in this environment (Cajax, 2013). This program focused on

recruiting and training psychologists who could work in rural and northern (remote) areas as jobs became available. The underpinning philosophy was that recruitment would be "easier" if students were exposed to rural and remote practice early in their training (Strasser et at., 2013). The clinical educational model for this program is to train generalist clinical psychologists with the skills to work with a variety of populations and to apply the skills and knowledge to the analysis across a breadth of health problems.

"The Manitoba Psychology program teaches cultural diversity not only in terms of ethnicity and language but also in the ways in which economic and work life factors influence the social psychology of communities' cultures and individuals' health behaviour and health status" (McIlwraith as cited by Dyck & Hardy, 2013).

Medicine has worked on building regionally based postgraduate training pathways (e.g., Flinders Rural Medical Program) and in a similar move; nursing has context specific postgraduate training programs such as RAN postgraduate qualification. Nursing has determined a continuum of professional competence that includes grounded remote experience, education and ongoing professional development required at each level of proficiency.

SLP does not have a clear definition for rural or remote practice. However, there is a definition from the Australian College of Rural and Remote Medicine (ACRRM) describing remote practice as "a unique mode of practice" that requires "an extended generalist doctor and encompasses a unique range of clinical roles and responsibilities". This professional body for rural and remote medical practitioners in Australia, distinguishes differences between urban and remote practice that include isolation and independence, limited staff and resources, remoteness from specialists and specialty facilities, differences in patterns of health in rural communities and the unique socio-cultural environments of rural resourcing and staff turnover, barriers to service delivery, inadequate resources, unrealistic workload demands and equitable health service delivery. This is comparable to rural and remote SLPs as they are generally required to take on much more responsibility than their metropolitan counterparts, particularly in more remote areas.

In Australia, there are inadequate levels of health and allied health professionals, particularly in rural and remote areas. Recruiting and retaining an appropriately qualified health workforce is a serious issue around Australia and globally. A well-balanced distribution of health professionals is needed to have a positive impact on health service delivery.

Several strategies and schemes have been developed and introduced in an attempt to attract and retain medical practitioners into rural and remote practice. The ACRRM was established in 1997 as an acknowledgement to address the shortage of rural and remote doctors in Australia. There was also acknowledgement that rural and remote medicine emerged as a distinct discipline with and identified need

for vocational preparation and continuing medical education programs. The ACRRM describes vocational training and a career pathway for those in rural and remote practice.

Clinical education for remote practice recognises that professionals in this field need to take on a variety of roles and tasks: administrative, supervisory, leadership roles, provide education and health promotion as well participates in policy development and representing the profession. The importance of ensuring the availability of broader training experiences has long been recognised (Tesson et al., 2005) in rural and remote area practice.

Key initiatives implemented across medicine such as rural medical programs; and in nursing such as the RAN qualifications to address the workforce shortage issue include exposure to rural and remote communities. This exposure comes through incentives like a country relieving program which requires backfill for practitioners in rural and remote communities, scholarship schemes, vocational preparation and continuing medical education programs to provide vocational training and a career pathway for those in rural and remote practice. It provided remote supervision and distance education for graduates who already made a commitment to an isolated or remote community. A number of vocational training colleges also require their trainees undertake a segment of their training in rural areas. Recommendations include core rotation and exposure to remote areas which resulted in an increasing number of students being exposed to remote practice and communities. Bodribb et al., (2016) suggested that shortage of rural practitioners is partly associated with lack of technical training for rural practice. This was acknowledged and led to some medical schools providing rural rotations as a way to provide context specific training. It was argued (Bodribb et al., 2016) that more universities must recognise the special technical needs of the remote practitioner in the provision of training curricula.

Graduate training for teachers includes embedded pedagogy and curriculum for teaching in remote contexts as well as education about the extensive networks and organisational frameworks that can be used for accessing information and support (Nakata, 2011).

In the legal profession, awareness of issues of practising in remote areas led to the development of online curriculum modules to educate law practitioners on the specifics of remote law practice (Rethinking Law Curriculum).

Tesson et al., (2005), Carson, (2011), and Wakerman and Humpreys (2013), all provide evidence to support the notion that increasing rural exposure impacts positively on recruitment into rural careers. Research has found that short rotations are likely to be less optimal than longer rotations for meeting the broader goals of the rural clinical schools to build future workforce capacity (Walters, Greenhill, Richards, Ward, Campbell, Ash, Schuwirth, 2012). There was indication that students' emotional attachment to remote

living comes from experience related to time, and the connection to local people that comes as the result of time spent in the communities. Therefore, the students on shorter rotations do not make those local connections.

Savery (2015) discusses the importance of learning within a context: "learning is a result of the activity, context and culture in which it occurs." The capacity of new graduates to adjust to their clinical roles is dependent on their quality of clinical education and training that they have in their undergraduate program.

Integrated or embedded approaches in clinical education as described by Tesson and colleagues (2005) demonstrate evidence for their respective health professions as successful initiatives for training in remote practice.

As described earlier, clinical education is the education and supervision of professional and clinical skills to ensure student clinicians attain competence in their skills and knowledge. Professional SLP governing organisations in Australia and internationally, such as SPA, American Speech-Language-Hearing Association (ASHA), Speech-Language & Audiology Canada (SAC), Royal College of Speech and Language Therapists UK (RCSLT), South African Speech-Language-Hearing-Association (SALHA), New Zealand Speech-language Therapists' Association (NZSTA) and the Irish Association of Speech & Language Therapists (IASLT) all widely accept and utilise clinical education as an important part of SLP training and education. There are many more professional SLP organisations[13] worldwide representing SLP practice with professional practice standards. It is the purpose of this study to explore via a systematic literature review if relevant research is available in the area of SLP remote practice.

[13] http://www.asha.org/members/international/intl_assoc/

The aim of this research is to investigate and explore SLP clinical education within current university curricula for remote practice preparation. This research is not an evaluation of particular models or programs of clinical education. It is also not a systematic review of rural educational pipeline interventions or strategies. The purpose of this systematic review is to examine the literature as it pertains to SLP clinical education for remote practice that has been or is currently part of SLP university curricula prior to graduation as a qualified SLP. As preliminary literature searches have identified the development of rural educational pipeline or pathways, this review will examine the literature on remote health service provision requirements and investigate different clinical education approaches used to facilitate effective remote practice. Relevant information on clinical education methods, programs and strategies may be helpful in facilitating future clinical education for SLPs for remote area practice. As there are many factors to consider in the provision of the delivery of clinical education, such as costs of training, availability of clinical placement sites and appropriate clinical educators, this study intends to provide an evidence base to inform the development and provision of appropriate SLP clinical education.

The research question for this systematic review is:

- What clinical education is available for student SLPs for remote practice?

Method

The systematic review aims to identify and evaluate Australian and international literature that is relevant to clinical education for SLPs in remote area practice.

Identification and selection of studies

A systematic search of published articles and grey literature was conducted using the online databases Australian Health Databases (Informit), CINAHL, Medline (via EBSCO), PubMed, Rehabilitation Reference Centre, RURAL, SCOPUS and search engines Google and Google Scholar. Databases were selected based on their inclusion of research relevant to the health professionals and clinical education and based on advice from a professional health service librarian. The literature search covered the period from 1990 to 2016. The following search terms were used: “speech therapy” or “speech and language pathology” or “speech and language therapy” and “clinical education” and “remote” or “rural”. The search terms were discussed and agreed by the researchers and librarian. Table 3 shows the inclusion and exclusion criteria used for this study.

Table 4: Inclusion and exclusion criteria

Inclusion criteria:	Exclusion criteria:
• inclusion of SLP and other allied health disciplines; • clinical education of SLPs other allied health disciplines; and • remote and/or rural clinical education for SLPs or other allied health disciplines	• did not include SLP or other allied health disciplines; • did not include clinical education of SLPs or other allied health disciplines; • did not include remote or rural as a context for clinical education; • referred solely to the medical and nursing disciplines; • referred to rural pipeline education programs or interventions; • referred to allied heath assistants training or education; • discussed clinical supervision or placements in reference to learning experiences or learning styles/attitudes; and • discussed continuing education or continuing professional development (CPD)

There were four stages in the selection of studies:

1. Identifying relevant studies using the search terms and strategy;
2. Selecting relevant studies using the inclusion criteria;
3. Rejecting studies using the exclusion criteria; and
4. Reviewing the reference lists of relevant studies of possible literature not already found.

Using the search terms (See Appendix 1) and online resources, studies were selected based on their inclusion of the relevant terms in their title and abstract. From these search results, abstracts were read from articles found to determine if they were appropriate to be considered for this study. Abstracts were read to ascertain if they were relevant in terms of remote SLP practice and with a focus on clinical education for remote SLP practice. Studies that included allied health professionals other than SLPs were also included if these did fit the inclusion criteria encompassing clinical education and the remote context.

According to Allied Health Professions Australia[14], and for the purpose of the study, the list of allied health professions consists of audiologists, chiropractors, dieticians, exercise physiologists, genetic counsellors, music therapists, occupational therapists, orthoptists, orthotists/prosthetists, osteopaths, hospital pharmacists, physiotherapists, podiatrists, psychologists, social workers, sonographers and SLPs. Abstracts that were relevant resulted in the full text articles being downloaded and read in their entirety to ensure they met the selection criteria. Studies were excluded if they did not include SLPs or allied health disciplines in clinical education and the remote context. As clinical education is a term that broadly encompasses education of health professionals in a variety of contexts, studies that focussed on strategies as part of the rural educational pathways to address recruitment and retention were also excluded (see also Chapter 1).

Results

Identification and selection of studies

A PRISMA flow diagram shown in Figure 5 was used to capture the article review selection and exclusion process. There was one study that directly included SLP and clinical education in the remote context: Moosa, T., & Schurr, S. (2011). Reflections on a Northern Ontario Placement Initiative. *Canadian Journal Of Speech-Language Pathology & Audiology*, *35*(2), 160-167.

There were 13 articles that were excluded from the review based on the exclusion criteria described above and after discussion by the researchers (See Appendix 2). However, those articles that discussed rural education pipeline strategies were retained for discussion due to the themes that arose sharing issues on clinical education.

[14] http://www.ahpa.com.au/Home.aspx

PRISMA Flow Diagram [15]

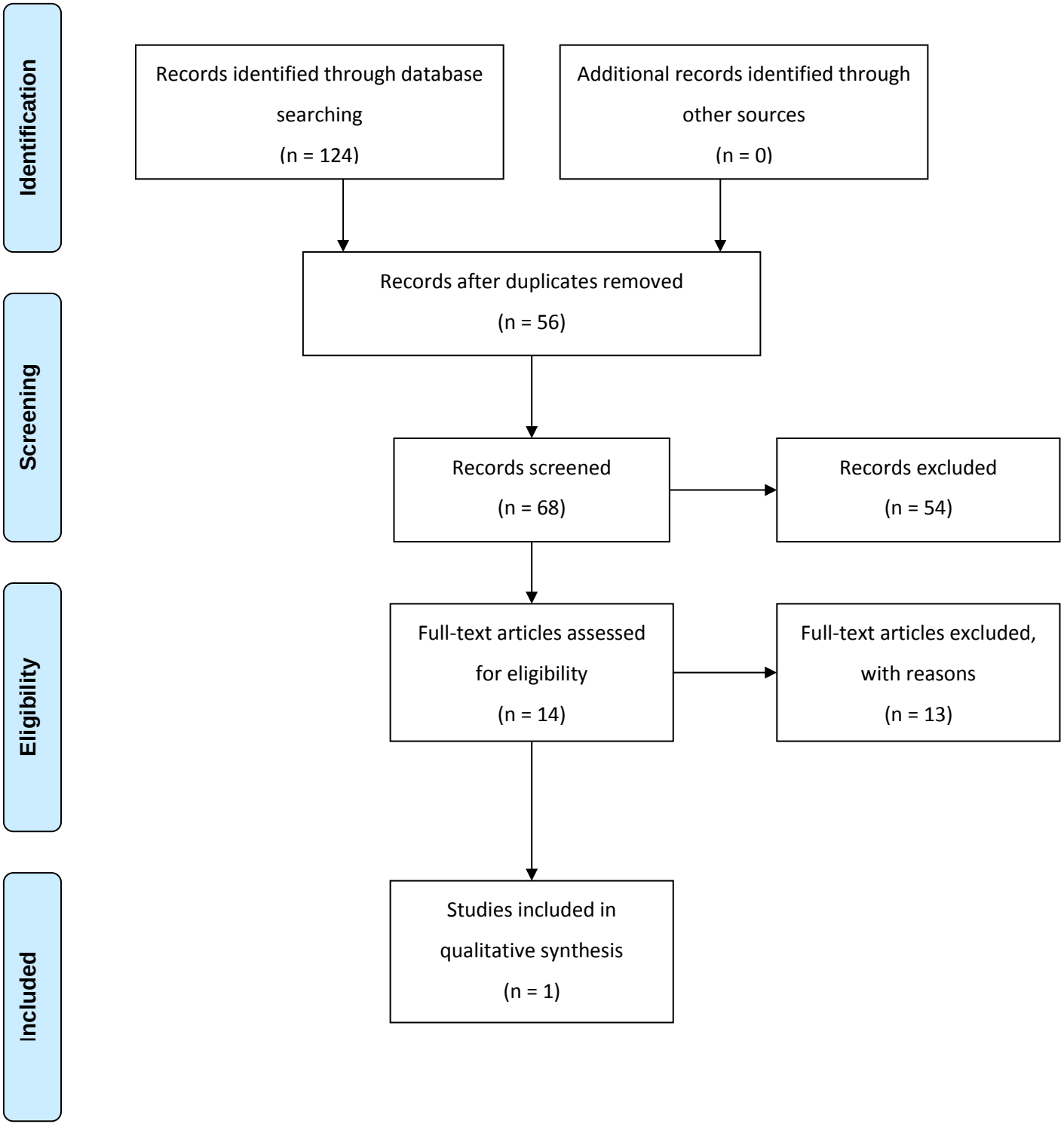


Figure 5: PRISMA flow diagram of the systematic review process

15 *From:* Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). *P*referred *R*eporting *I*tems for *S*ystematic Reviews and *M*eta-*A*nalyses: The PRISMA Statement. PLoS Med 6(7): e1000097. doi:10.1371/journal.pmed1000097 **For more information, visit www.prisma-statement.org.**

Description of the study

The identified article is a descriptive study of a SLP clinical education initiative developed at the School of Communication Sciences and Disorders at the University of Western Ontario, Canada. There was no theoretical framework or analysis; however, the article describes the setting (remote First Nations communities in Northern Ontario), participants (student SLPs) and intervention (clinical teaching and preparation within the SLP curriculum). This article was not ranked according to a relevant appraisal tool such as CASP (Critical Appraisal Skills Programme) as it was primarily a descriptive publication and the only study that could be found. It is however, an important article for this research, since it approached the issue of adequate SLP clinical education in a remote context.

The study followed 13 SLP students over three years. Students were selected based on a process (e.g., demonstrated interest, strong academic record). The university offered a one week placement for SLP students pending funding. Adjustments are made to materials and preparations, and 50 hours of instructions were provided over one year as preparation for the placement. The study does not provide information on valid and culturally relevant service provision.

Discussion

This literature search indicated a paucity of research available in the area of clinical education for remote areas, and a significant gap in research specific to SLP clinical education for remote areas. This emphasises the importance of this foundational/exploratory work in identifying the current status of remote clinical education for SLP in Australia and recognising/validating the practice of remote SLP.

This gap also identifies a potential benefit for SLP as it recognises clinical education strategies that have been used in other professions such as medicine, nursing, psychology, law and education for effective remote practice that may or may not work for SLP. Strategies or ideas could be adopted and applied to SLP. Therefore, it is important to investigate who SLPs are, how they are currently prepared, and how this compares with other professions. This is turn might inform clinical education for remote practice for SLP in the future.

It is encouraging to observe the varying clinical education initiatives and strategies at the international, national and local levels for the various professions. This research project was initiated to explore the current issues and barriers impacting specifically on SLPs practising in remote areas and to evaluate the potential of other clinical education initiatives and strategies being used for SLP.

It then stands to follow that there is overall acknowledgement of remote issues for the retention and recruitment of allied health professionals including SLPs as evidenced by the strategies such as the rural

educational pipeline. This then leads to the consideration of what is remote (in terms of geography) and whether there are specific clinical education strategies in place for SLPs in remote areas.

CHAPTER 4 – CLINICAL EDUCATION IN REMOTE AREAS OF AUSTRALIA

Introduction

The Competency-based Occupational Standards (CBOS) for SLPs (SPA, 2011) sets out the minimum skills, knowledge base and professional standards required for entry level SLP practice in Australia. The generic competencies are reasoning, communication, lifelong learning and professionalism. An entry-level SLP must demonstrate competence in any unit of CBOS in adult and paediatric practice with both acquired and developmental disorders in the areas of speech, language, swallowing, voice, fluency and multi-modal communication.

SPA acknowledges that entry-level SLP are not required to demonstrate competence in areas of complex clinical practice or all areas of practice without access to supervision, guidance and support from senior members of the profession (CBOS for SLP, 2011, SPA). This is especially noted for remote environments. census data from 2006 and 2011 (ABS) indicate that while there was a 27% increase in the SLP workforce in Australia in that five year period, there was a 42% increase in the SLP remote workforce. In 2006, 52% of the remote workforce was aged between 40-49 years. In comparison in 2011, less than 10% were aged 40-49 years while nearly 80% of the remote workforce was aged between 20 and 39 years (including 50% aged 20-29 years) (See Chapter Two). This strongly suggests that new graduates and/or early career SLPs are entering and practicing in remote areas.

This change to a less experienced workforce brings a number of issues for the profession, such as ensuring the competency of SLPs working in remote areas where there are well known practice differences compared with urban settings. Remote environments present challenges ranging from environmental factors such as distance, weather conditions and infrastructure to access and support of health service delivery, to recruitment and retention of adequately trained health professionals in providing these services (Wakerman & Humphreys, 2011). Recruitment and retention of SLPs in remote areas requires addressing specific practice competencies that acknowledge the differences in working in these areas and providing relevant clinical education to support the development of these competencies. Remote environments are often isolated, with limited peer support and access to resources. There is also an increase in the breadth and scope of clinical presentations and caseloads. The SLPs in a remote environment can be sole clinicians and more often than not are working in non-traditional models of service delivery that encompasses multidisciplinary, transdisciplinary, and interdisciplinary practice, tele - health or tele-medicine as well as community engagement. All these models and the effective utilization of them to deliver SLP practice in a remote environment would require specific clinical education so that professional competence is ensured.

Research has noted that practice in remote and rural contexts are different from practice in the urban contexts (See Chapter 3). Rural and/or remote competencies have been developed for other health professions including medicine (Worley & Murray, 2011), nursing (Lenthall et al., 2009), education (Nakata, 2011), as well as the legal profession (Rethinking Law Curriculum). SARRAH have developed a *Transition to Remote and Rural Practice Toolkit*[16] for allied health professionals to support the gap between university training and professional practice in a unique context (remote or rural environments). All of these advances demonstrate progress in developing awareness and identifying the differences of context specific health practice that requires specific education or training. At this time, competencies specifically for remote SLP practice are yet to be developed.

Durning, Artino, Pangaro, van der Vleuten, Schuwirth, (2011) described the use of authentic contexts integrated into an educational program to support the development of complex competencies. Identifying specific competencies relevant to practicing in a remote setting as well as developing clinical education to support the development of these competencies would likely result in ensuring new graduate, early career or even all SLPs are better prepared for remote practice.

The SLP profession is moving towards ensuring its members are adhering to a set of national standards that would require ongoing measured professional development to remain registered for practice. It would be a valuable addition to the profession to include the specific competencies for remote practice as part of professional development and support the development of teaching and learning for these areas.

Each profession is distinctive in its approach towards service delivery, clinical education and learning and supporting the continual professional development of its members. Whilst there may be general aspects of competencies from other health professions, especially in similar fields of health such as medicine and nursing that are relevant to SLP, there has been little research in exploring specific competencies for SLPs working in remote areas. This indicates a significant gap in our understanding of the needs of SLPs in remote areas and how to support them.

Australian universities providing speech pathology training need to face the challenge of developing clinicians able to provide culturally aware and appropriate services to an increasingly diverse population and in isolated positions with limited access to resources.

The aim of this study is to investigate the current SLP clinical education program in Australian universities using a two-pronged approach: (1) a quantitative audit of curriculum syllabus/topic/subject outlines for the inclusion of specific remote speech pathology practice; and, (2) a qualitative approach to gather and

[16] *(http://sarrah.org.au/content/transition-toolkit-remote-and-rural-practice)*

interpret data from semi-structured interviews regarding the views of clinical educators on the importance of remote specific clinical education.

Method

Theoretical framework

This particular research utilised a transformative paradigm approach with qualitative data. The transformative paradigm as described by Guba and Lincoln (1994) is composed of the following:

1. The axiological assumption about the nature of ethics – which in this research is about recognising the "power and cultural differences" in remote areas where SLPs practise in order to evaluate ways in which to facilitate clinical education;
2. The ontological assumption about the nature of reality – which in this research is about identifying different understandings of remote as a geographical location and practice and evaluating the outcomes;
3. The epistemological assumption about the nature of knowledge and the relationships between the knower and that that would be known (i.e. the evaluators and the stakeholders) - which in this research is about needing to build relationships between the researcher (and potential other practising remote SLPs) and the clinical education providers for SLP; and
4. The methodological assumption about the nature of systemic inquiry- which in this research is about using the quantitative data on SLP workforce and the qualitative inquiry via the interviews to capture the complexity of the phenomenon.

Qualitative research studies explore the complex phenomena encountered by clinicians, health care systems, policy makers and providers (Tong et al., 2012) and can offer a more-in-depth look at the issues. This methodological approach reveals themes/concepts that cannot be easily expressed by numbers (Braun and Clarke, 2014). It is important for researchers to incorporate the perceptions of clinical educators in order to gain a more complex and complete understanding.

Thematic analysis (Cresswell, et al., 2003; Braun and Clark, 2014) was used for identifying, analysing and reporting patterns (themes) within data. The primary researcher manually transcribed the data, read and re-read the data in its entirety to become immersed before grouping common responses. The responses were then coded with the most common responses noted first until the entire data set was included. The patterns in responses lead to establishing themes on environment and competency for the study. Braun and Clark (2014) observe that this method "offers an accessible and theoretically flexible approach to analysing qualitative data". A theme captures something important about the data in relation to the research question and represents some level of patterned response or meaning within the data set (Braun

and Clark, 2014). In this research, the objective was to gain and analyse the views of the clinical educators on current clinical education for remote practice and discuss the challenges and possible future strategies to manage these challenges. The clinical educators' views can be then be used to inform ongoing investigations or development in the area of remote SLP practice.

Analysis of remote curriculum in accredited study

The topic outlines or syllabus information for all 15 universities in Australia providing SLP courses was obtained from the university websites. Topics related to remote practice were collated. These were identified by the topic title and topic description if they included the word *remote*, for example remote health care, remote settings, etc.

Perceptions of clinical educators: interview and analysis

A semi-structured interview design was chosen for this study to allow the interviewees the freedom to explain their thoughts and to highlight areas of interest. This structure also allowed certain responses to be questioned in-depth to bring out clarity or explain certain contradictions. Semi-structured interviews are a commonly used qualitative method in health, education and demography (Brinkmann, 2014; Kitchin & Tate, 2013).

Selection of participants

The participants for this interview were clinical educators at universities who would have some contact with students on clinical placements and/or would be involved in in organising, submitting proposals for clinical education placements. Clinical educators/course coordinators at all 15 universities were emailed.

Recruitment of participants

Australian participants were recruited via a formal introduction letter, emailed to the clinical education course coordinators of all universities in Australia. Contact details were obtained directly from university websites. The study was also advertised via SPA's regular e-newsletter promoting research and seeking participants.

Informed individual consent was required for this research. A formal introduction letter, information sheet and consent form were provided to all participants (See Appendix 3). These provided an introduction to the researcher and supervisors and study purpose, an invitation to participate, the interview questions that were going to be asked, estimated time for participation and information on the potential risks and benefits of participating in the research. There was no significant risk to participants expected from this research.

Procedure

There are 15 universities in Australia that offer 20 SLP courses at undergraduate (4-year bachelor degree) and/or postgraduate (2-year Master degree) entry level to qualify to practice. Invitations to participate in the research were emailed to all university SLP clinical education program coordinators and advertised via SPA e-news under Research Participation news items.

The author conducted all the interviews by telephone/Skype which took approximately 30 minutes. Interview questions were emailed to the participants prior to the interview. Informed consent was obtained and assurance provided about confidentiality and data security. There were four open-ended questions to allow for probing for perceptions as well as perceived differences between remote and urban practice. Participants were asked questions from the interview guide and also invited to share their thoughts or ideas that were relevant to this research. No audio recording was made of these interviews. Responses were recorded in writing by the researcher during the interviews.

Ethics

Ethics approval was obtained through Flinders University Social and Behavioural Research Ethics Committee in Adelaide, South Australia (Project Number 6642).

Information on confidentiality for the participants and the data collected for research purposes was provided. The information sheet explained that data would be collected and stored in a de-identified manner and that participation was voluntary. Contact details for supervisors and the ethics committee were also included in the information sheet.

Interview design and process

Cohen and Crabtree (2014) state, "semi-structured interview guides provide a clear set of instructions for interviewers and can provide reliable, comparable qualitative data." This ensures the interviewer gathers the required information from the interview, while permitting the discussion to follow the interviewees on their conversational trajectories where appropriate (Cohen and Crabtree, 2014). The interview questions were constructed after reviewing relevant literature (Chapter Three). The researcher developed an 'interview guide' asking the following questions:

1. Where would you consider 'remote' for SLP clinical placements?
2. What skills (competencies) were targeted for SLP students at these remote clinical placements?
3. Do SLP students have adequate opportunities to learn/practise these skills (competencies)?
4. Would clinical education strategies specific for SLP in remote practice be a valuable addition to the university curriculum? Why or why not?

The interview questions were sent to the participants prior to the interviews, so that participants had time to read through and consider their ideas and responses.

Participants were interviewed via Skype or phone. Interview data was collected as field notes of the conversation including quotations and later transcribed verbatim.

Chivotti and Piran (2003) described using the participants own words to create themes and subthemes in qualitative research to ensure credibility and also, arguing that qualitative research is not necessarily objective. Patton (2005) also recommended that researchers are able to articulate their perspectives into a study. All researchers in this study are experienced clinicians with clinical experience in remote settings, and the second and third authors are researchers in the field of allied health remote practice. Data collected was de-identified with each participant assigned a code. Once transcribed onto a word document, paper copies of the field notes were kept locked in a filing drawer. File copies were saved with password protected encryption.

Data analysis

Data was analysed using thematic analysis framework as outlined by Braun and Clarke (2014); in that a theme captures something important about the data in relation to the research questions and represents some level of patterned response or meaning within the data set. The qualitative data collected via individual semi-structured interviews was documented in note form. It was then separated into the four key questions for content analysis. This involved examining the data specifically looking for responses that were similar or that demonstrated key differences from the participants.

Analysis was guided by the systematic stages of the thematic analysis framework approach described below.

The phases were:

1. Becoming familiar with the data through active repeated readings;
2. Generating initial codes about initial ideas;
3. Searching for themes;
4. Reviewing and refining themes and subthemes;
5. Defining and naming themes and subthemes; and
6. Finalising the results.

The researcher completed the descriptive content analysis manually which included reading and re-reading all the responses to gain familiarity with the data and noting initial broad themes or ideas. Responses were then coded to represent ideas and patterns of thought. Patterns of the most frequent responses and

similarities and differences between the participants were demonstrated as the analysis progressed. Initial common themes around the geography of remote became apparent as well as categories subthemes. A graphical representation of the themes and subthemes was then generated (see Figure 5). The second and third authors then reviewed all themes and subtheme categories as well as the entire data set independently to check for consensus.

Responses

Curriculum Data:

- 20 university course outlines obtained via university websites.

Interviews:

- six universities participated with one university having two participants;
- two universities declined to participate (one reporting that no remote placements were undertaken and one due to limited time to participate in the study); and
- seven universities did not respond.

Individual semi-structured interviews were conducted with seven SLP clinical program/placement coordinators. These interviews provided a scoping overview of the topic of interest by obtaining participants thoughts (Mertens & Wilson, 2012). These interviews are useful in obtaining information within the context of a complex environment (remote) and are also an appropriate first step in exploring the topic (Cresswell, 2007) of SLP in remote practice; which has had little research to date.

Participants were interviewed over the phone or Skype as determined by location. The key benefit of telephone/Skype interviewing in this study was to reduce the financial cost of travelling to diverse geographical locations. All interviews were conducted by the primary researcher. Interviews took up to 30minutes duration.

Results

Curriculum Data collection:

- two out of 15 universities had a remote specific topic that addressed health professionals working specifically in the Australian remote context; and
- five out of 15 universities had an Indigenous health and culture specific topic. This included one out of initial two universities above that had the remote specific topic.

Interviews:

There were two overarching themes that emerged to describe the thoughts and ideas of the participants in the interviews. These were: environment and competency. Each theme also contained subthemes. The first theme "Environment" emerged to describe the participants' thoughts and perceptions of the remote context. The second theme "Competency" emerged in regards to the variety of skills required or challenged when practising in remote areas.

The two key themes and corresponding subthemes are outlined in the Figure 5 below. In describing these themes and subthemes, in some cases, the participant's own words/phrases are directly presented.

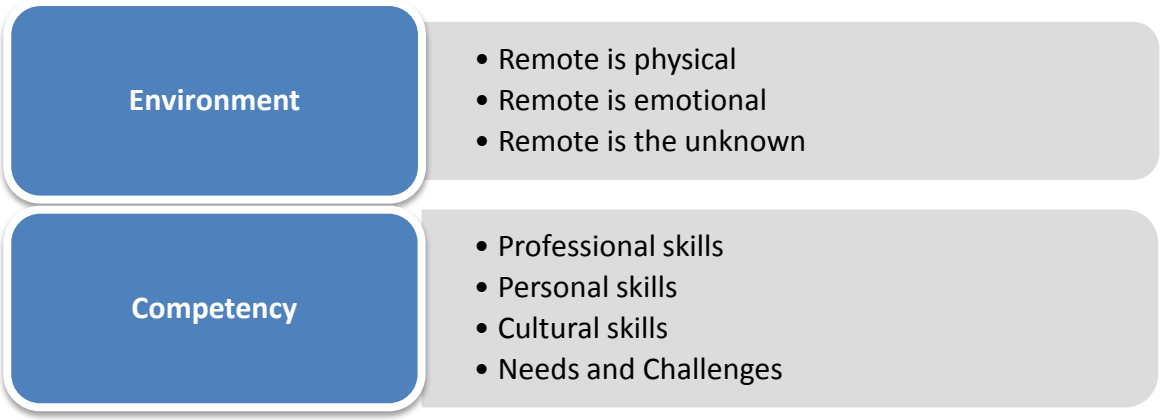


Figure 6: Summary of themes related to clinical education in remote environments in Australia

Theme 1: Environment

Identifying remote was challenging for participants. Three clear subthemes were identified in participant responses. These were that the concept of remote was: physical, emotional and unknown.

1.1 Remote is physical

Participants described remote using specific place names:

> Mallanganee, Boggabilla (U1)
>
> Central Australia, anywhere in NT, Western Australia, Tasmania (U4)
>
> Thursday Island, Mt Isa, Roma, Kingaroy, Cape York, Maryborough, Townsville and Cairns, Atherton (U6)

They also primarily described remote using distance:

> Far away is remote e.g. Alice Springs, Broome (U5)
>
> …away from major services and away from a city (U1)

> If it's remote it depends on the distance from a service centre, a population centre, small remote areas. (U3)
>
> When we consider remote we need to consider travel time and access to get there. (U4)
>
> Remote is not about going out for a couple of days – you need to fly out. (U3)

In addition, they described remote in relation to size of place, population, access to services:

> Geographical remoteness makes it less accessible. (U4)
>
> Remote is differences in service delivery (U2)
>
> Could be places where there are only sole clinicians (U4)

1.2 Remote is emotional

Participants recognized that remote conveyed a set of emotional responses such that required management (adjustment or coping). It presented as fear of the unknown and one participant (U2) explained as:

> …remote requires adjustment, how far from a secure base.
>
> At remote areas, proximity is a barrier, it's about security, lack of familiarity of what to do. They're away from their secure base.
>
> I'd like to adjust it to the requirement to cope.
>
> What are the challenges for them to adjust to?
>
> So for students, how much are they thinking about the change, their encounters, the services out there.
>
> They can't find a script or a schema to support their framework/ideas
>
> …having to go by themselves is difficult because who do they go out with for dinner you know. It's what they think. Go out with someone at dinner. It's that secure base.

1.3 Remote is the unknown

All participants acknowledged difficulty in clearly identifying remote areas; from stating that they used university classification to government classifications. In most responses it was clearly stated that:

> This is hard. (U3)
>
> …it's difficult to define. (U2)
>
> …I don't know exactly. (U1)

Theme 2: Competency

Overall, all participants described that there are specific experiences and exposure and skill requirements that are needed or are experienced in remote placements. 6 out of 7 participants believed that there are

skills required for remote practice and that these are already addressed in current clinical education and that these skills were valuable. One participant responded that there was "no clear answer" as the strategies for practice "were across the board" i.e. not necessarily specific to remote.

2.1 Professional skills

These responses were linked to understanding that remote practice is different to urban practice in that it is broad and varied and that there is limited staffing

> Remote is a non-metropolitan practice. (U1)
>
> There's the diversity of presentations in caseload, diversity of opportunities at placements. (U2)
>
> Could be places where there are only sole clinicians. (U4)
>
> Skills needed are similar in geographically remote communities (U4)
>
> Seen various medical treatments that they haven't seen in a country or city health care centre (U6)

2.2 Personal or soft skills

These were described in detail. Participants highlighted the differences in the environment (remote) that required specific skills to manage.

> There's a focus on transitioning, students knowing themselves and how different it is to their normal environment. (U2)
>
> So for students, how much are they thinking about the change, their encounters, the services out there. (U2)
>
> I think those who come out of placements without a schema to be able to cope can be more devastated by experiences (U2)
>
> They are looking at resilience, teamwork, communication, flexibility, adaptability. (U1)
>
> Switching that headspace to be skilled enough to practice. (U1)
>
> Being interested and inclusive, working inter-professionally and inclusively. (U1)
>
> Soft skills which are difficult to teach unlike technical skills that can be taught. (U1)
>
> They need to be able to reflect on their life experiences. Be able to contextualise. Be able to process and develop resilience. (U2)
>
> They need to have good self-reflective skills. It's a crucial aspect of learning that's able to be taken anywhere. (U2)
>
> Mental health is an area of focus as students battle a cognitive load. As well as being overwhelmed by the remote environment. (U2)
>
> If students are unable to understand and process all of these, it hits them at a threshold level. (U2)
>
> So yeah, just being there gives them exposure. (U2)

2.3 Cultural skills

Respondents described having engagement with communities, building relationships and being exposed to different cultures

> That there are differences in social determinants of health, cultural, sociological, economical. (U3)
>
> … many have never seen an Indigenous person. (U2)
>
> Building trusting, lasting relationships. (U2)
>
> In the early years speech path students have engagement in the communities so that they are aware of services that exist, how to build relationships, how to be aware of resources that are needed, and how to work at a community level. (U4)
>
> Placements include refugee support programs, classroom support programs, ESL programs. (U4)
>
> There is a need to develop skills in the work areas, different work areas. Being expected to deliver services and other enhanced skills like working with communities and building relationships. (U4)

2.4 Needs and challenges of remote placements

Participants highlighted some challenges of remote placements they have noted from their experiences and from their students.

> The problem for masters' students is financial as students have to pay for the course upfront. They're not wanting to invest in remote. (U2)
>
> What are the incentives for remote placements? (U2)
>
> One [student] said no…. Just didn't get into it. (U6)
>
> Some students do see remote as not a good option for their career. (U6)
>
> Fourth year students are not usually having their placements in remote areas. As they don't consider it a good option for their career in the start or in the long run (U3)
>
> It's hard to get placements, remote (U6)

Discussion

The aim of this research was to explore what is happening in clinical education for remote practice for SLP in Australia. In doing so, there is an opportunity to examine the thoughts and perceptions, needs and challenges to the provision of SLP services in remote areas of Australia.

Quantitative data collection indicated that there are only two universities out of 15 that are teaching a topic specific to remote practice and five out of 15 universities are teaching a topic specific to Indigenous health and culture. Qualitative interviews have indicated that the remote environment is unique with its diversities and uncertainties. It requires a range of skills from professional, personal and cultural that can present as challenges for SLP.

Remote as a unique environment

The definitions of remote were not always clear but there was an overwhelming understanding that it was a place far away from everything considered urban. The commonality in describing "remote" was most often linked to distance first and foremost, and then to smaller population sizes and lack of accessibility to services, resources, etc. These then are inherently what make the practice of remote SLP challenging. New graduate or early career SLPs would require time, exposure and professional support and supervision to have developed the range of skills required for remote practice. What is common though is that in remote areas, they are likely to be a sole clinician or part of a working unit with a high turnover of staff. Remote practitioners are usually "generalists" who have to provide a broad range of service to a diverse caseload with higher clinical responsibility within an isolated remote environment.

Remote competencies for practice

All participant responses acknowledged the general concept of remote practice requiring competency in skills and knowledge. This is a positive finding in for this exploratory study. The general consensus (six out of seven participants) was that there was awareness of the differences or challenges in remote practice as evidenced by personal and professional skills requirements described by all participants. There was also agreement amongst the six out of seven participants that these specific remote competencies were already in place in the current clinical education curricula, albeit indirectly. That is, these competencies were being addressed by having students in remote placements. It appears then that the context of practice is perhaps what is highlighting the specific challenges requiring these skills and knowledge.

Many scenarios describe the remote environmental challenges that require students to learn or work on their skills to practice. How effectively this is measured is unknown save for the positive or negative student feedback from the placements.

It is interesting to note that although there is awareness from all participants that there are differences in remote practice inherently, as evidenced from the responses, it was a challenge for participants to explicitly identify remote competencies. The "generalist" term of practice was used by one participant to describe the skills. This term "generalist" has been used in medical literature (ACRRM) to describe the broad and varied scope of practice for medical practitioners in a contextual setting.

Outcomes

Qualitative studies on medical students and nursing students have provided information regarding the influence of the rural/remote training experience (Strasser, et al., 2013) on clinical education and future practices. This study utilised similar research methods to gain insight into the training/ education program

for SLP going to practice in remote areas. As a result, it was noted that university curriculums continue to give inadequate consideration to the unique challenges faced by students and service providers in the remote setting. Overall, the issues raised in this research by participants have vast similarities to finding from medicine and nursing.

This continuing issue needs greater recognition in SLP practice if we are going to address challenges inherent in working in the remote setting. It needs to be achieved through better and more specific clinical education for all SLP to be able to practice in a remote context.

A curriculum reflective of the challenges for remote practice specific to SLP would be of benefit to the workforce and ultimately in meeting the health needs of the remote communities.

Limitations of the study

The findings of this research must be considered in light of some limitations. Formal analysis of the topics in university curricula to compare content was not undertaken as part of this study. At the exploratory stage, the primary aim was to establish the understanding and acknowledgement of "remote" and as such use this as defining word to identify relevant data. Audio recordings were not completed as the questions were limited within a specific framework of establishing geographical parameters to "what is remote?" and competencies (i.e. skills and knowledge) for practice. Although the researcher noted a thorough 'verbatim' account of most verbal utterances, there were no non-verbal cues that were retained. The sample size of respondents was also small and included participants who as part of the voluntary nature of this research have independently chosen to participate. In this instance, it is possible that the views expressed by the participants may not necessarily represent the views of clinical educators/program co-ordinators in other universities. Transcribed responses were not sent to the participants to verify for accuracy. However, the findings of this research do indicate that even amongst the small sample size there are key similarities in the various viewpoints of the interviewed participants that provide us with an initial understanding of this issue. Despite the limitations, it is argued that this study adds knowledge to the challenges faced by SLP in remote practice and may be the first step in addressing the issue.

In conclusion

The findings of this research support the consideration to include competencies for remote practice within a university clinical education curriculum. Given that the ultimate goal is to provide adequate and effective health care services for remote communities requiring SLP services, it stands that adequately training and supporting SLPs in remote practice is essential.

CHAPTER 5 – PILOT STUDY OF CLINICAL EDUCATION IN REMOTE NORTHERN SWEDEN

Introduction

Research into the rural and remote workforce is a growing area. Health workforce challenges in isolated areas remain a challenge worldwide (Bragg & Bonner, 2015; Dussault & Franceschini, 2006). Due in part to the varying classifications and perceptions of rural and remote regions worldwide, research outcomes have variously separated or grouped rural and remote areas together. This leads to questions as to whether there are also clear relationships between geographical locations overseas based on rurality and/or remoteness and the views of clinical educators on the importance of remote specific clinical education.

Recruitment and retention of health professionals to rural and remote areas is a well-documented issue for health services worldwide. The literature (Chapter 3) in many countries consistently documents health service provision and workforce issues in locations that are described alternatively as rural, remote, very remote or sparsely populated. It has been noted that geographical locations can be a contributing factor to workforce-specific issues (Ducat, et al., 2014). Remoteness in Australia in comparison to ruralness in Ireland or Scotland is very different given distance, populations and infrastructures in these locations. This research is not looking to clarify the geographical boundaries in so far as it attempts to establish that rural/remote areas are looked at in terms of "not urban" locations, and then to explore whether there is a connection or relationship between the variable studied which, in this study, is clinical education for remote specific practice against the grouped "not urban" locations. Also, to ascertain whether there are similarities and differences between two different countries in opposite hemispheres.

This research began by exploring clinical education for remote practice for SLPs in Australia (Chapter 1, Chapter3). As an exploratory study in this area where there is limited data for the SLP profession, semi-structured interviews were conducted with SLP clinical educators in Australian Universities to collate perspectives on remote specific clinical education for SLPs (Chapter 4).

To provide a contrast for the results a case study was conducted in Northern Sweden where there are comparable similarities in the challenges faced by health services in the recruitment and retention of health professionals to provide remote health service in isolated environments and with indigenous populations.

The aim of this study is to investigate the current SLP clinical education program in Umeå University and health professional clinical education at the Centre for Rural Medicine, using a two-pronged approach: (1) a quantitative audit of curriculum syllabus/topic/subject outlines for the inclusion of specific remote speech pathology and health professional practice; and, (2) a qualitative approach to gather and interpret data

from semi-structured interviews regarding the views of clinical educators on the importance of remote specific clinical education.

Northern Sweden

Sweden can be divided (traditionally) into three major regions of Götaland (Southern Sweden), Svealand (Central Sweden) and Norrland (Northern Sweden). These divisions have no formal purpose; rather they serve to broadly categorise for context. Formally, the country is divided into 21 counties or governing councils similar to Local Government Areas (LGAs) as referred by the ASGS (ABS, 2011) areas in Australia. Figure 7, below, shows the whole map of Sweden and Figure 8 the traditional and formal county divisions which also form the geographical boundaries. The counties have responsibilities in governing the public health system, transportation, regional planning and cultural amenities. Northern Sweden is a region that covers almost 60% of Sweden. However, it is sparsely populated with approximately 12% of the Sweden's total population of 9.6million (Sweden Census 2013 provided by Statistics Sweden[17]). The Sami people are the Indigenous people of Scandinavia and live in many remote areas in Northern Sweden. There are approximately 40, 000 Sami people and 51 Sami villages in Sweden (Hassler, 2005).

Umeå, which is in the Västerbotten County (Northern Sweden), has a total population of 116, 465 (Statistics Sweden) which is comparable to SLA3 regions in Australia (Chapter 2). The Centre for Rural Medicine is based in Storuman (also in Västerbotten County), in a sparsely populated region with a population of approximately 2,200 (Statistics Sweden, 2016). Umeå University and the University Hospital of Umeå were identified as the primary institutions addressing the needs of the remote populations and health workforce in Northern Sweden in terms of educational training (for the health workforce) and the provision of health services (i.e. medical care).

Remote areas of Sweden face similar challenges to remote areas of Australia in providing necessary health services to dispersed areas with nomadic Indigenous populations. The key considerations of this study were to examine and interpret the results from Sweden, and discuss the findings, considering the environmental context and the health workforce in Sweden as well as in Australia. The relevance of this research is to explore whether in addressing remote specific clinical education, there will be better trained and supported health professionals in remote areas who are willing to live and work in remote areas. It is also essential to analyse the results from the point of view of the clinical health educators to understand their positions, experiences and perspectives in the delivery of clinical education in remote areas. The specific aim of this part of the study was then to explore the complex phenomena of perspectives and factors that are present in remote specific clinical education in two countries.

[17] http://www.scb.se/en_/

Figure 7: Map of Sweden

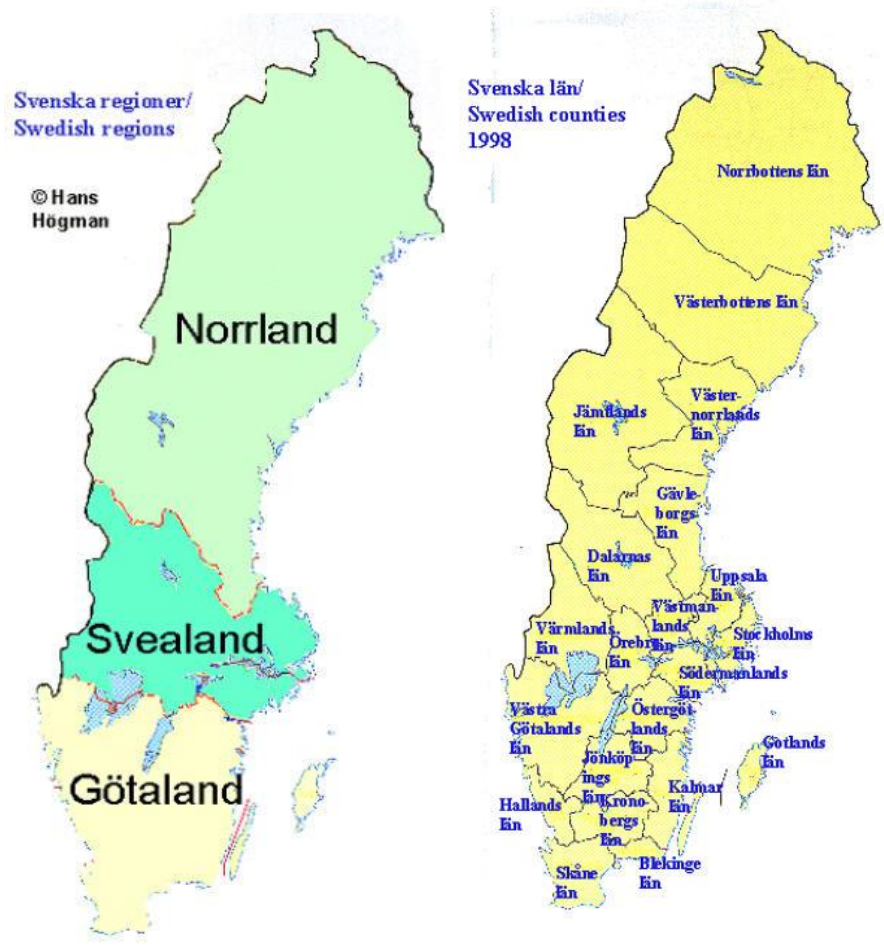


Figure 8: Division of Swedish regions and counties

Method

Framework

This study used a qualitative framework (Braun and Clark, 2014) and transformative paradigm (Guba & Lincoln, 1994) outlined in the previous chapter (Chapter 4).

Selection of participants

The participants for this interview were SLP clinical educators at Umeå University who would have teaching contact with SLP students and/or would be involved in organising clinical education and placements as well as supporting students during their placements. Health professionals (medical and nursing) from the Centre for Rural Medicine, Sweden, who were also living and working in Northern Sweden and were directly providing clinical education and/or developing clinical education curricula to students during their placements, were also interviewed.

Recruitment of participants

All participants were recruited via professional network requests while the researcher was based at the Centre for Rural Medicine. Informed individual consent was required for this research. A formal Flinders University introduction letter, information sheet and consent form were provided to all participants. These provided an introduction to the researcher, supervisors and study purpose, an invitation to participate, the interview questions that were going to be asked, estimated time for participation and information on the potential risks and benefits of participating in the research. There was no significant risk to participants expected from this research.

Procedure

Participants were interviewed face-to-face on an individual basis by the primary researcher. Interviews took approximately 30minutes duration. No audio recording was made of these interviews. Interview data was collected as field notes of the conversation, including quotations, and later transcribed. Data collected was de-identified with each participant assigned a code. Once transcribed onto a word document, paper copies of the field notes were kept in a locked filing drawer. File copies were saved with password protected encryption.

Ethics

Ethics approval was obtained through Flinders University Social and Behavioural Research Ethics Committee in Adelaide, South Australia (Project Number 6642).

Interview design and process

The interview questions were sent to the participants prior to the interviews, so that participants had time to read through and consider their ideas and responses. During the interviews, participants were asked the following questions (similar to the Australian cohort in Chapter 4):

a. What/Where would you consider 'remote' for (SLP) clinical placements?
b. What skills (competencies) are targeted for (SLP) students at these remote clinical placements?
c. Do (SLP) students have adequate opportunities to learn/practise these skills (competencies)?
d. Would clinical education strategies specific for in (SLP) remote practice be a valuable addition to the university curriculum? Why or Why not?

The only difference to this set of questions in comparison to the Australian study was that the term SLP was omitted from the questions when interviewing health professional clinical educators that were not SLPs.

Data analysis

Data was analysed using thematic analysis framework as outlined by Braun and Clarke (2014) as described in Chapter Four.

Responses

Curriculum Data:

- Umeå University course outlines obtained via university SLP course coordinators.

Interviews: Nine health professionals:

- three SLPs;
- two GPs; and
- four nurses, including two Sami nurses.

Results

Curriculum Data collection:

- no remote specific topic; however reference made to remote context via topic on the use of tele-medicine strategies as a pathway for service provision to these areas.

Similarly to Chapter 4 with the Australian cohort, there were two overarching themes that emerged to describe the thoughts and ideas of the participants in these interviews. These were: environment and competency. Each theme also contained subthemes. The first theme "Environment" emerged to describe

the participants' thoughts and perceptions of the remote context and the second theme "Competency" emerged in regards to the variety of skills required or challenged when practising in remote areas.

The two key themes and corresponding subthemes are outlined in the Figure 9 below. In describing these themes and subthemes, in some cases, the participant's own words/phrases are directly presented.

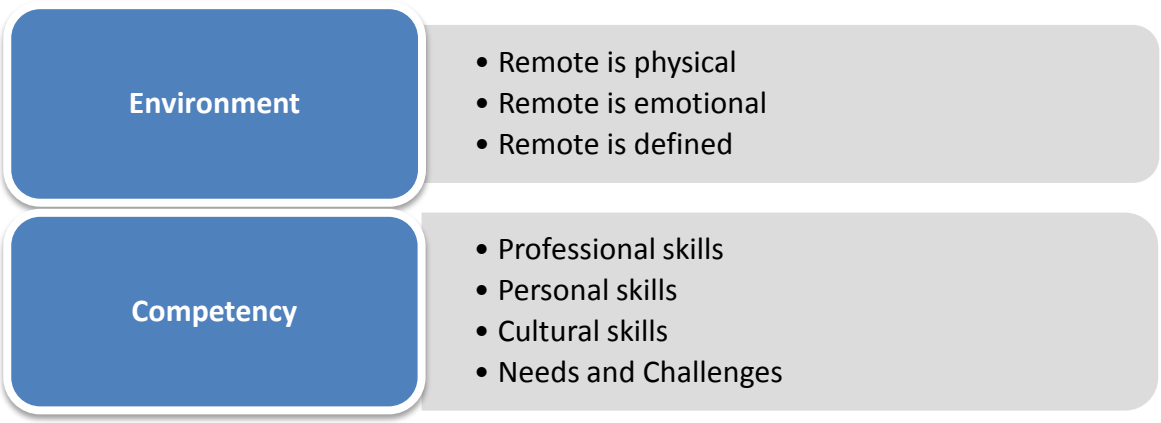


Figure 9: Summary of themes related to clinical education in remote environments in Northern Sweden

Theme 1: Environment

Participants were all able to clearly describe the remote environment. There were three clear subthemes identified in the describing of a remote environment.

1. ***Remote is physical***

Participants described remote using specific place names:

> Gällivare [town in the Norbotten County] (S1)
>
> Umeå [university town in Northern Sweden in the Västerbotten County] (S3)
>
> Norbotten [northernmost county of Sweden that covers almost a quarter of the country's landmass and is sparsely populated] (S2)
>
> Jokkmokk or Kiruna [towns in Norbotten County, with the latter positioned north of the Arctic Circle] (S5)

They also primarily described remote using distance and time as reference points and described it from the perspectives of institutions (hospital, university) and students:

> Rural areas, difficulty to travel to and from and having a low level of access to services (S2)

Hospitals think remote is distance and time (S4)

Universities just talk about it "It's far off", they don't make early appointments for patients because they forget, don't consider the time people have to travel to the appointments from larger villages or smaller villages (S1)

For a placement students think it's far away, not so easy going to and fro (S2)

In addition, participants also they described remote in relation to size of place, population and access to services:

Rural is about travelling distance if its greater than 50 km outside a bigger town, less services, less infrastructure, basic staffing, doctors, nurses, maybe physiotherapists, occupational therapists but usually no speech therapist. (S3)

2. Remote is emotional

Participants reported that remote conveyed a set of emotional responses such that required management (adjustment or coping). It presented as uncertainty and was explained from students' views as:

What shall I do there? I've been there once, it's all done, no need to go there again. (S1)

Students understand that's it different… (S4)

Students find that they need to go out and be social so being in a rural area is a little bit boring. There's not much to do. There are not enough people in the same age group. (S3)

An SLP clinical education coordinator described students' linking their emotional responses specifically to their experiences in remote areas without conscious awareness that it could happen in cities as well:

Bad placements include water leaks, accommodation issues, a sick supervisor which can all happen in metropolitan areas as well, but you know students. (S2)

One participant also described remote as being free and having opportunities:

Remote is more free, more choices to make to be able to do a lot more (S5)

3. Remote is defined

All participants acknowledged that there were clear definitions of what was considered remote and referred to government or institutional websites for details:

Remote for health placements is 45 mins or greater to a municipality. There's official definition on sites (S6)

There is an official definition found on the county website. (S1)

They also outlined parameters in describing remote – distance, less infrastructure, services and population:

Rural is about travelling distance if its greater than 50km outside a bigger town, less services, less infrastructure, (S3)

Remote is defined as distance to the hospital, access to services, and population density. (S4)

Most of Northern Sweden is remote. The distance from cities, big centres where you have lots of people, lots of services. (S7)

There was also awareness and reference to Sami villages, remote occupations (police, mountain rescue) and environmental challenges in remote areas described by participants:

The Sami villages, people working in mountain rescue - like the police. Health clinics, district clinics are usually remote. (S8)

Difficult to get to many places because of the lack of roads, sometimes blocked after snow. (S9)

There was also acknowledgement of a 'lifestyle view' of defining remote:

Students also can define remote as if they need to bring skis or if they need to bring high heels. (S3)

Theme 2: Competency

Overall, all participants described that there are specific experiences, exposure and skill requirements that are needed or are experienced in remote placements.

1. Professional skills

These responses were linked to understanding that remote practice is different to urban practice in that it is broad, varied, complex and that there is limited resourcing:

They need knowledge of rural medicine. (S4)

There are different populations that are being seen. Example of parents who are not likely to ask for help for services for their children. There is a lack of awareness of voice disorders, speech therapy, and the search for minor therapy. (S1)

Cases are more complex because they have come at a later stage (S6)

Students find working in remote areas provide a more holistic approach. (S7)

2. ***Personal or soft skills***

These were described in detail. Participants highlighted the differences in the environment (remote) that required specific skills to manage. They also described opportunities to for students to challenge themselves and be aware of opportunities and limitations:

Challenges in remote areas require students to be driven, to take on personal challenges, to be warm hearted for the patients and fight for their democratic rights to be able to speak. (S1)

And you can be a pioneer in a setting because you are the only one there. (S1)

Students think about it similarly. They understand that to work remote or rural you have to know so much and you have to make your own decisions. (S3)

…you have to know a lot of stuff. You have to be comfortable to get out in nature. To know that you can't have everything that you need or want. (S5)

3. ***Cultural skills***

Participants acknowledged that there are cultural issues that need to be considered when working in remote areas. They also described having engagement with remote communities, building relationships and the importance of combining knowledges (clinical, professional and traditional).

You will find cultural issues. (S1)

You know there needs to be an understanding that there is value in traditional knowledge. You have to experience it in the right place. Otherwise, you're using knowledge that won't work. (S8)

4. ***Needs and challenges of remote placements***

Participants highlighted some challenges of remote placements to attract students and also to then recruit and retain professionals:

> They also feel that there is no permanency with the younger generations there is lack of access for using your mobile phones and therefore social connections which are very important become difficult. (S1)

> Hard to entice students to come over. Just as hard to get students out to rural. (S3)

> We want to provide as much education as we can. But we need the students first! (S8)

> Cities on the coast, easier, accessible, have airports. They offer recruitment packages, at least a couple of them, so easier – study-job. (S3)

The majority of participants expressed positivity in the opportunities provided by remote areas to learn and experience:

> Then it's just the reality you know when you're out there alone. That one is hard to teach. You have to be there. That's why it's good to have the practice out there. (S9)

> I think most importantly you need to be able to know when to ask for help, understand your boundaries, keep learning – there's always much to learn and not enough time. (S7)

> Students should have more time in remote areas so they can practice these remote area skills. This is the best way for them to learn. (S5)

A few of the participants were themselves involved in developing clinical education resources to address these challenges:

> We've created a program – DRABCD [first aid procedure] translated into Sami languages. We teach this to the herders so that they know what to do and call for help in emergency.

> I show this [PowerPoint] education to nurses, students. This is so that they can learn the difference. (S9)

> GMC [Centre for Rural Medicine] is doing really good work with remote clinical work and encouraging people to do research here and getting the word out there. So, I think over time people will understand more of working in rural areas, remote areas. (S6)

They also explained that students' do have similar positive experiences:

> We give them the experience of hands-on working in the sjukstuga. They can see the difference. (S4)

Discussion

The aim of this research was to explore what occurs in clinical education for remote practice for SLPs and health professionals in Northern Sweden. In doing so, there is an opportunity to examine the thoughts and perceptions, needs and challenges to the provision of SLP and health services in remote areas of Sweden. Audit of Umeå University SLP curriculum indicated no specific topic on remote practice. There were however, topics related to using technology (e.g. tele-medicine) to provide services to remote area.

Clinical educators at the Centre for Rural Medicine were actively developing and trialling remote specific resources and researching in this area.

Qualitative interviews have indicated that the remote environment is unique with its diversities and uncertainties. It requires a range of skills from professional, personal and cultural that can present as challenges or opportunities for SLsP and health professionals.

Remote as a unique environment

The definitions of remote were clear with all participants as most referred to official definitions on government websites. They could identify the clear parameters that captured the essential difference of remote areas such as distance and less access to services and infrastructure. Participants were also knowledgeable in how their students would likely define remote areas and the lifestyle: “bring skis or …high heels”.

Remote competencies for practice

All participant responses acknowledged overall that the concept of remote practice requires specific competency in skills and knowledge. They were also actively involved in the initiation, development, trials and evaluation of materials in this field. This is a positive finding for this exploratory study.

Outcomes

It would be beneficial for health systems and universities to have policies to shape clinical education for remote areas. Evaluations of clinical education programs directed towards rural or remote areas are likely to provide valuable knowledge of differences in perspectives and attitudes in the remote context.

Limitations of the study

Audio recordings were not completed as the questions were limited within a specific framework, i.e. there were four questions that explored the perspectives around remote geography, and health/clinical education and practice. Although the researcher noted a thorough ‘verbatim’ account of most verbal utterances, there were no non-verbal cues that were retained. The sample size of respondents was also

small. Despite these limitations it is argued that this study adds knowledge to the challenges faced by SLPs and other health professionals in remote practice.

Conclusion

Several participants commented on remote practice being a specialty. Therefore, enhanced clinical education and training may generate an interest in this area as a career pathway that could improve the remote health workforce sustainability. The findings of this research support the consideration to include competencies for remote practice within a university clinical education curriculum. Given that the ultimate goal is to provide adequate and effective health care services for remote communities requiring SLP services, it stands that adequately training and supporting SLPs in remote practice is essential.

CHAPTER 6 – CONCLUSION AND RECOMMENDATIONS

General discussion

The primary focus of this research is to investigate clinical education for remote areas in the field of SLP. Remote areas face substantial health inequities in the provision of health services and in the accessibility of adequate and efficient health services for its populations. This includes under resourced staffing of health professionals in remote areas. This is in part due to the challenges of recruiting and retaining suitably qualified health professionals to remote areas.

Literature in the field of rural/remote challenges in recruiting and retaining health professional report one determining factor as appropriate clinical education/professional support for skills specific to practice in these contexts. There is wide acknowledgement that a broad and varied skill set is required to practice in remote contexts.

This research aims to:

- explore the demography of the Australian SLP workforce; specifically comparing national and remote statistics and trends over a five year census period,
- review relevant literature to examine undergraduate and/or postgraduate entry level clinical education specific to remote context in SLP as well as other allied health disciplines,
- audit the current clinical education in tertiary curricula in Australia; and
- investigate perceptions of clinical educators in Australia regarding remote practice and contrast these results to Northern Sweden.

In doing so, key findings and possible ideas/strategies for the future planning needs for the SLP workforce are revealed. The conclusions that can be drawn from this research in terms of the values and benefits for the SLP profession and workforce, educational institutions and workplaces are discussed. Limitations of this current research are discussed together with recommendation and directions for future research.

Summary of major findings

Demography: The major finding from analysing the demography of the SLP national and remote workforce is that the remote workforce numbers have increased substantially between 2006 and 2011, and that the SLP workforce in 2011 is dominated by young, new or early career SLPs. This may be linked in part to the expansion of graduate entry level SLP qualification courses at many universities within the last ten years.

Literature Review: The major findings from a systematic literature review for entry level SLP clinical education specific for remote practice in tertiary institutions are narrowed to one descriptive study in Northern Ontario, Canada. There is a dearth of relevant literature in the allied health disciplines. This presents a clear gap in knowledge for the field of remote context-specific clinical education. The two largest health disciplines of medicine and nursing have acknowledged this gap in knowledge and developed options to address it such as rural educational pipelines and advanced/postgraduate recognised qualifications such as the rural GP program and remote area nursing.

Qualitative Studies of Australia and Northern Sweden: The perceptions of remote area practice from Australian data indicate that knowledge of remote areas is not well defined, though there is broad consensus and understanding that it is different to the city. Following that, remote specific competencies are thought to be already encompassed with current clinical education in such a way that it was utilising the same clinical and professional skills already taught, although requiring a different environment. However, the results indicate that remote area practice from clinical educational placements point of view presents challenges to the student cohort, which could indicate that the competencies to practice are not adequately addressed within current Australian clinical education entry-level curriculum. This contrasts with the findings from Northern Sweden where all participants were aware of official definitions of remote areas and were able to clearly describe parameters for remote areas. The challenges faced by the Swedish student cohort on remote clinical placements are similar to the Australian findings; however more positive feedback was reported by the Swedish clinical educators on the opportunities presented from remote challenges as well as the feedback from students. One important finding in appropriate remote-specific clinical education is the involvement of Swedish health professionals in proactively developing resources and initiating research in this area.

Table 6, in working towards constructing a conceptual model, summarises the key findings from this research using the five characteristics analysed from the SLP demography by looking at the importance and potential consequences or future planning needs. It draws on the qualitative research enquiry from Australia and Northern Sweden regarding remote workforce perception and experiences as well as the broader remote health workforce literature.

Gender

Even though the SLP workforce is significantly female dominated, overall strategies that enable gender equity in the workforce need to be considered to be in line with national and international progress in addressing the gender gap. Policies that support flexibility in working and studying arrangements for both males and females are likely to drive overall workforce retention and sustainability. These include flexibility in working hours, including full-time and part-time considerations, support for employees re-entering the

workforce after a period of time, as well as equitable parental and carer leave arrangements. To ensure a suitably trained workforce, clinical education strategies would include flexible study options such as distance education modes, intensive workshops or access to online modules. With simulation based learning increasingly used in the healthcare sector and educational sector, it would be an effective strategy for the future learning needs of this workforce. Online modules that are flexible in such that they can be started and completed based on participants requirements may also encourage the uptake of this learning.

Table 5: Summary of issues for the SLP Workforce – towards conceptual model

Characteristic	Importance	Clinical education needs	Future planning needs
Gender	Flexible working hours Position availabilities (FTE, covers) Exit and re-entry into workforce Financial commitments	Flexible options to study such as by distance mode, intensives, online modules,	Flexible learning modules Simulation based learning workshops
Age	Career progression Support for professional development Professional isolation in remote areas	Professional development access with CPD points Clearly outlines progression courses, e.g. advanced practice certificate Networking opportunities	Remote specific training included in initial qualification program Advanced SLP specific remote curriculum
Educational Qualifications	Less experienced/new graduates entering remote areas for work Experienced SLPs leaving remote workforce	More educational needs Opportunities to specialise, ongoing CPD to maintain their qualifications	Clearly outlined advanced education for remote practice Embedded remote curriculum at qualifying level Clearly established professional support networks with remote experienced clinicians
Employment sector Public vs. Private	Job satisfaction Autonomy, critical mass of staff, management Caseload selection Professional status Pay Part-time or full-time Job availability	Responsibility to provide training Profession specific training Management and leadership training	Partnership arrangements with universities or remote centres providing specialist courses Coordination between tertiary training centres and employers for recruitment and retention pathways
Migration	Turnover Identifying undersupply or potential areas of need	Accessibility to relevant and timely education Affordable education	Recognition of specialist remote practice

Age

As the SLP workforce is young (20-39 years old), a structured career pathway that acknowledges and values remote area specialisation could be effective in recruiting and retaining professionals to isolated remote areas. There is evidence for this as demonstrated in the medical discipline with the rural education pipeline for clinical education curriculum within an undergraduate or entry level qualification, as well as the professional additional qualification of the rural GP practitioner four year qualification program. Both these options clearly outline a structured career pathway that is recognised as a specialised field within the curriculum as well as with advanced recognition. For SLP, this translates to explicitly embedding remote specific training in the current curricula as demonstrated by two universities already (via remote specific topic) and also exploring the option of advance remote specific training for those already qualified.

Educational Qualifications

As shown in the demography data, there is an increase of new or early career SLP graduates entering the remote workforce, which means there would be more educational needs to ensure a well-skilled workforce in remote areas that is able to provide effective and efficient service provision. As well as having the educational options embedded within curriculum and as an advance option, networking opportunities with experienced remote area clinicians would be beneficial.

Employment sector

SLPs are increasingly being employed in the private sector as evidenced from the census data. The responsibility to provide adequate training then becomes an area of importance to ensure a well-qualified SLP workforce. Literature from WA identified management and leadership competency frameworks that were important to develop the skills of senior allied health professionals in remote areas as an avenue to retain staff. This could be beneficial to the SLP profession as well.

Migration/turnover

Remote areas have very high migration and turnover which affects the critical mass of the workforce and its knowledge and experience base. Easy and affordable accessibility to education would be an important aspect as well as future planning for a structured career pathway with associated education as a method to retain SLPs and in doing so perhaps stabilise the movements of the workforce.

Implications for SLP entry-level clinical education

This research supports the use of remote specific clinical education to be included in entry-level curricula to better prepare new graduates. For example, peer learning (that may help reflective learning and

preparation for clinical supervision) and awareness of the need for lifelong learning that includes leadership training to equip them for leading positive change in this area.

Limitations of the current study

The limitations of this research should be considered:

- The SLP workforce numbers and consequently trends are not wholly accurate due to the method in which the data is collected by the Australian Census. SLPs are grouped together with Audiologists due to the overall small number of professionals within these allied health professions. SLPs are also not required to be registered nationally which contributes to not being able to accurately determine workforce numbers.
- Firstly, there was a change in statistical collection methods by the ABS from 2006 to 2011. The ASGC which was used from 2001 was replaced by the ASGS from 2011. This resulted in the spatial boundaries being reclassified between from 2006 and 2011. However, it should be noted that this does not necessarily affect remote area classifications that were the primary areas focused on for this research. The RA classification system in 2011 is more statistically stable and is used by many statistical agencies. There may be a slight boundary shift between rural and regional areas but remote areas are unlikely to be very affected. When looked at together with the demographic SLP data that indicates highly spatial clustering of SLPs in an area, it is unlikely that including or excluding particular spatial boundaries will make a significant difference in the overall workforce numbers.
- The responses to the interview questions were not audio or video recorded and formally transcribed which may have limited analytical possibilities such as the discourse analysis and relational behaviour of the participants. There was also the possibility of reducing the potential for error by the researcher by recording the participant responses. It would have been beneficial to send the transcribed field notes to the participants post interview to obtain validation to the responses.
- Not all Swedish universities were invited to participate in the interviews and the inclusion of other health professionals meant that the resulting data could not be used to directly compare SLP perspectives in both countries.

Suggestions for future research

Areas for future research include: assessing the perceptions of SLP students of their reasons for choosing or not choosing remote clinical placements, and their experiences in remote placements if undertaken. This could be a basis for exploring gaps in competency requirements. Also, based on findings from other health

disciplines in Australia and internationally, analysis of remote specific competencies and how appropriate, effective and sustainable these are in order to determine potential benefits to the SLP profession.

Conclusion

Remote specific clinical education for many disciplines, including SLP, is still in the early stages of development. Its need, however, is being demonstrated in larger health disciplines such as medicine and nursing. Therefore, including remote-specific education in SLP curricula has potential to have a positive impact on SLP education, training and preparation for practice. With the challenges of providing a safe, effective and evidenced based SLP service in remote areas falling to new graduate and early career SLPs as they enter the workforce in these contexts, there needs to be focussed research to better prepare this workforce for remote area practice and to provide recognition and incentives for qualifications that will assist with recruitment and retention for remote practice.

APPENDICES

Appendix 1: Search strategy – Literature Review

Search Strategy: Medline (via EBSCOhost)

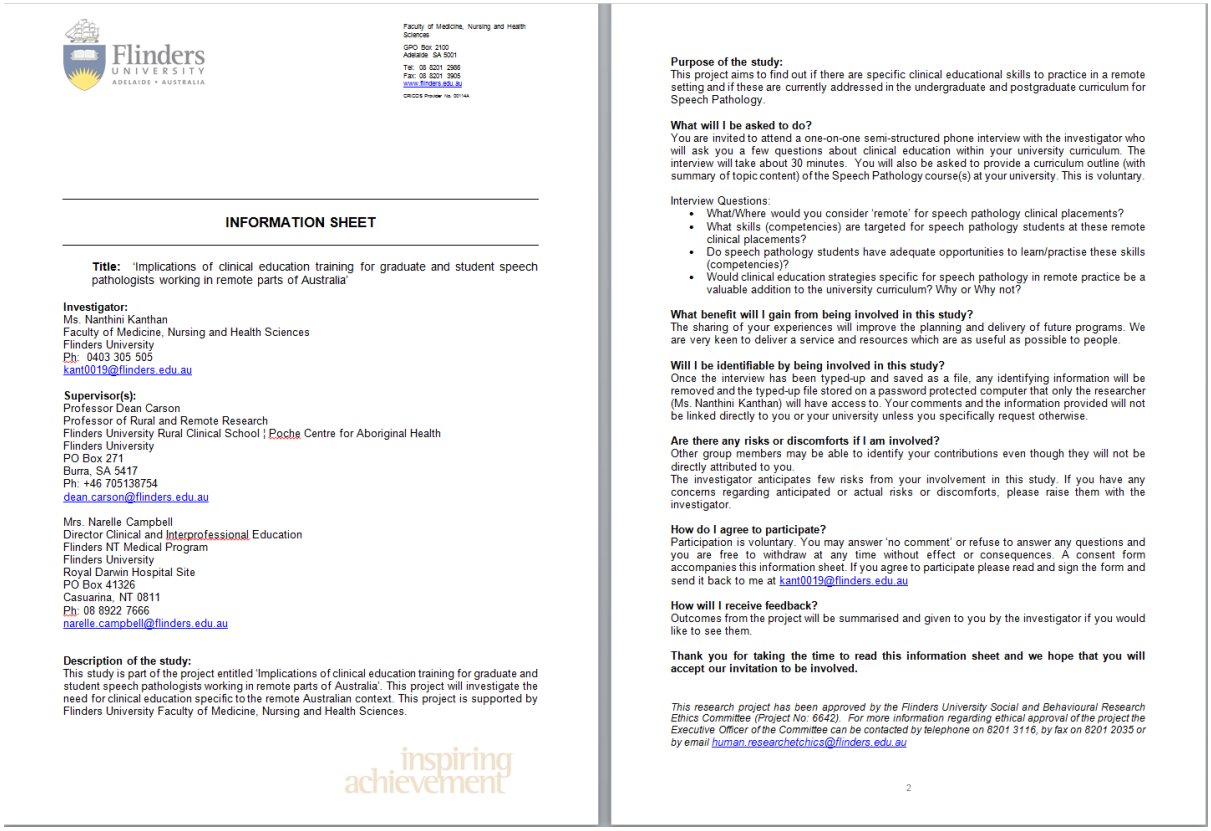
S1	speech (therap* OR patholog* OR language)	**Results** (16,895)
S2	(MH "SLP")	**Results** (2,375)
S3	(MH "Allied Health Occupations+")	**Results** (46,226)
S4	S1 OR S2 OR S3	**Results** (60,302)
S5	"clinical education" OR (Competenc* (professional OR clinical))	**Results** (2,603)
S6	(MH "Professional Competence") OR (MH "Clinical Competence")	**Results** (94,019)
S7	S5 OR S3	**Results** (95,995)
S8	remote OR rural	**Results** (188,623)
S9	(MH "Rural Population")	**Results** (45,778
S10	S8 OR S9	**Results** (45,778)
S11	S4 AND S7 AND S10	**Results** (38)

Note: Search was repeated using Australian Health Databases (Informit), CINAHL, Medline (via EBSCO), PubMed, Rehabilitation Reference Centre, RURAL, SCOPUS with similar variations

Appendix 2: Table of articles included and excluded – Literature Review

	Publication author/year	Title	Study type	Sample	Key findings	Comment
1	Winn et al. (2015)	Impact of the Northern Studies Stream and Rehabilitation Studies programs on recruitment and retention to rural and remote practice: 2002-2010	International: Canada Internet survey	280 Rehabilitation professionals (AUD, OT, PT, SLP)	Completion of academic and clinical education in a rural/remote setting shows a positive increase in practising in rural/remote areas	Not directly relevant to clinical education for SLP in remote areas
2	Moosa & Schurr (2011)	Reflections on a Northern Ontario Placement Initiative	International: Canada Discussion/reflection of a clinical education initiative	13 SLP students over 3 years Students selected based on process (demonstrated interest, strong academic record, etc)	University continues to offer 1 week placement for SLP students pending funding. Adjustment made to materials and preparations. 50 hours of instructions over 1 year. Still lack information to provide valid and culturally relevant service	Relevant to SLP, clinical education and remote
3	Parkin et al. (2014)	Work experience program at a metropolitan paediatric hospital: assisting rural and metropolitan allied health professionals exchange clinical skills	Australia: QLD	29 AHP		
4	Lin et al. (2009)	Developing competencies for remote and rural senior allied health professionals in Western Australia	Australia: WA	Literature search for developing competency framework	Development of a Rural and Remote Allied Health Competencies – Senior Professional Framework	Broad framework for Senior AH professionals
5	Smith (2007)	'Skill transfer' and inter professional boundaries in rural and remote radiography	Australia: NSW Semi-structure interviews	20 rural radiographers And 17 remote x-ray operators	Skills transfer amongst rural professionals can be a solution to workforce shortage with risks.	Not directly relevant to clinical education for SLP in remote areas
6	Minsini et al (2010)	Self-efficacy beliefs and confidence of rural physiotherapists to undertake specialist paediatric caseloads: a paediatric example	Australia : QLD Questionnaire	23 PT in ARIA regions (remote)	Rural PTs have challenges such as working in unsupported and challenging environments resulting in low confidence. Strategies required to assist this issue.	Not directly relevant to clinical education for SLP in remote areas
7	Sheppard & Nielsen (2005)	Rural and remote physiotherapy: its own discipline	Australia Discussion		Presenting argument of rural and remote specialisation being formally recognised	Not SLP. Discusses ideas relevant to clinical education
8	Wielandt & Taylor (2010)	Understanding rural practice: implications of occupational therapy education in Canada	International: Canada Self-administered survey	59 OT	Characteristics of current rural OT therapy identified. Need for professional support identified. Hands on training in rural setting, personal characteristics, coming from a rural background – identified as valuable. Request for management and organisational skills in curriculum identified as essential for rural practice	Not SLP
9	Lyle et al. (2006)	Value adding through regional coordination of rural placements for all health disciplines: The Broken Hill experience	Australia: NSW Case-study setting of ~~U~~Sydney University's Broken Hill Department of Rural Health Program	AH students	Regional coordination linked to infrastructure and supports in rural settings provide quality rural placements	
10	Barney et al. (1998)	Evaluation of the provision of fieldwork training through a rural student unit	Australia: SA Questionnaire and interviews	21 OT	The pilot Rural fieldwork unit enabled rural placements for OTs	Not SLP. Valid experiences.
11	Lee & MacKenzie (2003)	Starting out in rural New South Wales: the experiences of new graduate occupational therapists	Australia: NSW Semi-structured interviews	5 OTs	Rural practice rewards and challenges identified. New graduates valued challenging aspects as opportunities for skill development. Enhancing support for new graduates in rural position may help with retention	Not SLP. Not clinical education. Valid experiences
12	Wills (1996)	Perceptions and experiences of occupational therapists in rural schools	International: US Interviews and observation	6 OTs	Challenges of rural practice described	Not SLP. Not clinical education. Valid experiences
13	Murray & Lawry (2011)	Maintenance of professional currency: perceptions of occupational therapists	Australia	17 OTs 4 focus group semi-structured interviews	Insights into self-identified professional learning	Not SLP, clinical education or remote.
14	Spiers & Harris (2015)	Challenges to student transition in allied health undergraduate education in the Australian rural and remote context: a synthesis of barriers and enablers.	Australia	Literature review	Discussion of issues for rural and remote Workforce development	Not SLP, not clinical education. Relevant discussions

Appendix 3: Information Sheet and Consent – Qualitative Studies



Faculty of Medicine, Nursing and Health Sciences
GPO Box 2100
Adelaide SA 5001
Tel: 08 8201 2966
Fax: 08 8201 3905
www.flinders.edu.au
CRICOS Provider No. 00114A

INFORMATION SHEET

Title: 'Implications of clinical education training for graduate and student speech pathologists working in remote parts of Australia'

Investigator:
Ms. Nanthini Kanthan
Faculty of Medicine, Nursing and Health Sciences
Flinders University
Ph: 0403 305 505
kant0019@flinders.edu.au

Supervisor(s):
Professor Dean Carson
Professor of Rural and Remote Research
Flinders University Rural Clinical School ¦ Poche Centre for Aboriginal Health
Flinders University
PO Box 271
Burra, SA 5417
Ph: +46 705138754
dean.carson@flinders.edu.au

Mrs. Narelle Campbell
Director Clinical and Interprofessional Education
Flinders NT Medical Program
Flinders University
Royal Darwin Hospital Site
PO Box 41326
Casuarina, NT 0811
Ph: 08 8922 7666
narelle.campbell@flinders.edu.au

Description of the study:
This study is part of the project entitled 'Implications of clinical education training for graduate and student speech pathologists working in remote parts of Australia'. This project will investigate the need for clinical education specific to the remote Australian context. This project is supported by Flinders University Faculty of Medicine, Nursing and Health Sciences.

inspiring achievement

Purpose of the study:
This project aims to find out if there are specific clinical educational skills to practice in a remote setting and if these are currently addressed in the undergraduate and postgraduate curriculum for Speech Pathology.

What will I be asked to do?
You are invited to attend a one-on-one semi-structured phone interview with the investigator who will ask you a few questions about clinical education within your university curriculum. The interview will take about 30 minutes. You will also be asked to provide a curriculum outline (with summary of topic content) of the Speech Pathology course(s) at your university. This is voluntary.

Interview Questions:
- What/Where would you consider 'remote' for speech pathology clinical placements?
- What skills (competencies) are targeted for speech pathology students at these remote clinical placements?
- Do speech pathology students have adequate opportunities to learn/practise these skills (competencies)?
- Would clinical education strategies specific for speech pathology in remote practice be a valuable addition to the university curriculum? Why or Why not?

What benefit will I gain from being involved in this study?
The sharing of your experiences will improve the planning and delivery of future programs. We are very keen to deliver a service and resources which are as useful as possible to people.

Will I be identifiable by being involved in this study?
Once the interview has been typed-up and saved as a file, any identifying information will be removed and the typed-up file stored on a password protected computer that only the researcher (Ms. Nanthini Kanthan) will have access to. Your comments and the information provided will not be linked directly to you or your university unless you specifically request otherwise.

Are there any risks or discomforts if I am involved?
Other group members may be able to identify your contributions even though they will not be directly attributed to you.
The investigator anticipates few risks from your involvement in this study. If you have any concerns regarding anticipated or actual risks or discomforts, please raise them with the investigator.

How do I agree to participate?
Participation is voluntary. You may answer 'no comment' or refuse to answer any questions and you are free to withdraw at any time without effect or consequences. A consent form accompanies this information sheet. If you agree to participate please read and sign the form and send it back to me at kant0019@flinders.edu.au

How will I receive feedback?
Outcomes from the project will be summarised and given to you by the investigator if you would like to see them.

Thank you for taking the time to read this information sheet and we hope that you will accept our invitation to be involved.

This research project has been approved by the Flinders University Social and Behavioural Research Ethics Committee (Project No: 6642). For more information regarding ethical approval of the project the Executive Officer of the Committee can be contacted by telephone on 8201 3116, by fax on 8201 2035 or by email human.researchetchics@flinders.edu.au

2

BIBLIOGRAPHY

Auer, K., Carson, D., Winn, C. S., Chisholm, B. A., Hummelbrunner, J. A., Tryssenaar, J., … Norbye, B. (2013). Decentralized nursing education in Northern Norway: a basis for continuing education to meet competence needs in rural Arctic healthcare services. *Australian Journal of Rural Health*, *19*(2), 1. JOUR. http://doi.org/10.1111/ajr.12047

Australia, S. P. (2001). *Competency-based occupational standards (CBOS) for speech pathologists: Entry level*. Speech Pathology Australia.

Australian Institute of Health and Welfare, (2007). *Rural, regional and remote health: a study on mortality (2nd edition).* Retrieved from http://www.aihw.gov.au/publication-detail/?id=6442468054

Australian Institute of Health and Welfare, (2008). *Rural, regional and remote health: indicators of health status and determinants of health.* Retrieved from http://www.aihw.gov.au/publication-detail/?id=6442468076

Australian Institute of Health and Welfare, (2012). *Allied health workforce 2012.* Retrieved from http://www.aihw.gov.au/publication-detail/?id=60129544591

Behan, J., Condon, N., Milic´evic´, I., & Shally, C. (2009). A Quantitative Tool for Workforce Planning in Healthcare: Example Simulations. *Labour*, (June), 138. Retrieved from https://docs.google.com/fileview?id=0Bx_D46UWx7b6NTFiMmFkNWUtN2Q3My00YmViLWFlODItZjg5NDFjNDRkOGYx&hl=es

Bent, A. (1999). Allied health in Central Australia: Challenges and rewards in remote area practice. *Aust J Physiother*, *45*(3), 203–212. Journal Article. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/11676768

Biddle, N., & Wilson, T. (2013). Indigenous Australian population projections: problems and prospects. *Journal of Population Research*, *30*(2), 101-116.

Brinkmann, S. (2014). *Interview* (pp. 1008-1010). Springer New York.

Bragg, S., & Bonner, A. (2015). Losing the rural nursing workforce: Lessons learnt from resigning nurses. *Aust J Rural Health*, *23*(6), 366–370. Journal Article. http://doi.org/10.1111/ajr.12251

Brodribb, W., Zadoroznyj, M., & Martin, B. (2016). How do rural placements affect urban-based Australian junior doctors' perceptions of working in a rural area?. *Australian Health Review*.

Campbell, N., McAllister, L., & Eley, D. (2012). The influence of motivation in recruitment and retention of rural and remote allied health professionals: a literature review. *Rural Remote Health*, *12*, 1900. Journal Article. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/22845190

Carey, T. A., Wakerman, J., Humphreys, J. S., Buykx, P., & Lindeman, M. (2013). What primary health care services should residents of rural and remote Australia be able to access? A systematic review of "core" primary health care services. *BMC Health Serv Res*, *13*, 178. Journal Article. http://doi.org/10.1186/1472-6963-13-178

Carson, D. (2011). Political economy, demography and development in Australia's Northern Territory. *Canadian Geographer*, *55*(2), 226–242. JOUR. Retrieved from http://10.1111/j.1541-0064.2010.00321.x

Carson, D., Ensign, P., Rasmussen, R. O., & Taylor, A. (2011). Perspectives on 'Demography at the Edge'. *Demography at the Edge: Remote Human Populations in Developed Nations*, 3-20

Caxaj, C. S. (2016). A review of mental health approaches for rural communities: Complexities and opportunities in the Canadian context. *Canadian Journal of Community Mental Health*, *34*, 29-45.

Chiovitti, R. F., & Piran, N. (2003). Rigour and grounded theory research. *Journal of advanced nursing*, *44*(4), 427-435.

Clarke, V., & Braun, V. (2014). Thematic analysis. In *Encyclopedia of Critical Psychology* (pp. 1947-1952). Springer New York.

Cresswell, J. W., Plano-Clark, V. L., Gutmann, M. L., & Hanson, W. E. (2003). Advanced mixed methods research designs. *Handbook of Mixed Methods in Social and Behavioral Research*, 209–240. Retrieved from http://www.sagepub.com/upm-data/19291_Chapter_7.pdf

Creswell, J. (2007). Analyzing Quantitative Data. *The Steps in the Process of Research*, 182–211. http://doi.org/10.4135/9781849208604

Crowe, B. L., & McDonald, I. G. (1998). Evaluation of a continuing medical education programme for rural and remote health-care professionals. *J Telemed Telecare*, *4*(4), 241–242. Journal Article. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/10505362

Ducat, W. H., Burge, V., & Kumar, S. (2014). Barriers to, and enablers of, participation in the Allied Health Rural and Remote Training and Support (AHRRTS) program for rural and remote allied health workers: a qualitative descriptive study. *BMC Med Educ*, *14*, 194. Journal Article. http://doi.org/10.1186/1472-6920-14-194

Cohen, D., & Crabtree, B. (2014). Qualitative research guidelines project. 2006. *Disponibile all'indirizzo: www. qualres. org*.

Dyck, K. G., & Hardy, C. (2013). Enhancing access to psychologically informed mental health services in rural and northern communities. *Canadian Psychology/Psychologie canadienne*, *54*(1), 30.

Durning, S., Artino, A. R., Pangaro, L., van der Vleuten, C. P., & Schuwirth, L. (2011). Context and clinical reasoning: understanding the perspective of the expert's voice. *Medical education*, *45*(9), 927-938.

Dussault, G., & Franceschini, M. C. (2006). Not enough there, too many here: understanding geographical imbalances in the distribution of the health workforce. *Human Resources for Health*, *4*, 12. JOUR. http://doi.org/10.1186/1478-4491-4-12

Ferguson, A. (2005). Competency-based occupational standards: Influences on Australian speech pathology education. *Folia Phoniatrica et Logopaedica*. http://doi.org/10.1159/000088995

Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. *Handbook of qualitative research*, *2*(163-194), 105.

Gupta, N., Zurn, P., Diallo, K., & Dal Poz, M. R. (2003). Uses of population census data for monitoring geographical imbalance in the health workforce: snapshots from three developing countries. *International Journal for Equity in Health*, *2*, 11. JOUR. http://doi.org/10.1186/1475-9276-2-11

Health Workforce Australia (n.d.). [workforce data]. Retrieved from http://www.health.gov.au/workforce

Hesse-Biber, S. N., & Leavy, P. (2005). The craft of qualitative research: A Holistic Approach. *The Practice of Qualitative Research*, 3–44.

Iacono, T., Johnson, H., Humphreys, J., & McAllister, L. (2007). Recruitment of speech pathologists into positions considered less attractive. *Advances in Speech Language Pathology*, *9*(3), 204–212. JOUR. http://doi.org/10.1080/14417040600949659

Judd, F. K., & Humphreys, J. S. (2001). Mental health issues for rural and remote Australia. *Australian Journal of Rural Health*, *9*(5), 254–258. http://doi.org/10.1046/j.1440-1584.2001.00417.x

Kitchin, R., & Tate, N. (2013). *Conducting research in human geography: theory, methodology and practice*. Routledge.

L, V. H., Kirkham, S., & Harwood, C. (2005). The strength of rural nursing: implications for undergraduate nursing education. *International Journal of Nursing Education Scholarship*, *2*(1), 13p–13p. JOUR. http://doi.org/10.2202/1548-923X.1142

Lin, I. B., Beattie, N., Spitz, S., & Ellis, A. (2009). Developing competencies for remote and rural senior allied health professionals in Western Australia. *Rural & Remote Health*, *9*(2), 1. JOUR. Retrieved from http://www.ezpdhcs.nt.gov.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=edo&AN=44369921&site=eds-live&scope=site

Mak, D. B., Plant, A. J., & Toussaint, S. (2006). "I have learnt ... a different way of looking at people's health": an evaluation of a prevocational medical training program in public health medicine and primary health care in remote Australia. *Med Teach*, *28*(6), e149-55. Journal Article. http://doi.org/10.1080/01421590600776404

McAllister, L. (2005). Issues and innovations in clinical education. *Advances in Speech Language Pathology*, *7*(3), 138–148. JOUR. http://doi.org/10.1080/14417040500181239

McGrail, M. R., & Humphreys, J. S. (2015). Spatial access disparities to primary health care in rural and remote Australia. *Geospat Health*, *10*(2), 358. Journal Article. http://doi.org/10.4081/gh.2015.358

Moosa, T., & Schurr, S. (2011). Reflections on a Northern Ontario Placement Initiative. *Canadian Journal Of Speech-Language Pathology & Audiology*, *35*(2), 160-167.

Mpofu, R., Daniels, P. S., Adonis, T. A., & Karuguti, W. M. (2014). Impact of an interprofessional education program on developing skilled graduates well-equipped to practise in rural and underserved areas. *Rural Remote Health*, *14*(3), 2671. Journal Article. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/25178157

Nakata, M. (2011). Pathways for Indigenous Education in the Australian Curriculum Framework. *The Australian Journal of Indigenous Education*, *40*, 1-8.

National Rural Health Alliance, (2011). Australia's health system needs re-balancing: a report on the shortage of primary care services in rural and remote areas. *Retrieved from: http://www.ruralhealth.org.au/key-rural-health-documents*

O'Toole, K., & Schoo, A. M. (2010). Retention policies for allied health professionals in rural areas: a survey of private practitioners. *Rural Remote Health*, *10*(2), 1331. Journal Article. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/20443649

Patton, M. Q. (2005). *Qualitative research*. John Wiley & Sons, Ltd.

Playford, D., Worthington, R., & Riley, G. (2013). Women in the rural medical academic workforce. *Rural & Remote Health*, *13*(3), 1–8. JOUR. Retrieved from http://www.ezpdhcs.nt.gov.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=rzh&AN=104217092&site=eds-live&scope=site

Pollard, C., Ellis, L., Stringer, E., & Cockayne, D. (2007). Clinical education: A review of the literature. *Nurse Education in Practice*, *7*(5), 315–322. http://doi.org/10.1016/j.nepr.2006.10.001

Prideaux, D. (2007). Curriculum development in medical education: From acronyms to dynamism. *Teaching and Teacher Education*, *23*(3), 294–302. http://doi.org/10.1016/j.tate.2006.12.017

Rethinking Law Curriculum (n.d.) [curriculum data]. Retrieved from http://unelss.org/wp-content/uploads/2012/11/RRLEN-Brochure.pdf

Rintala, T. M., Paavilainen, E., & Åstedt-Kurki, P. (2014). Challenges in combining different data sets during analysis when using grounded theory. *Nurse researcher*, *21*(5), 14-18.

Russell, D. J., Humphreys, J. S., & Wakerman, J. (2012). How best to measure health workforce turnover and retention: five key metrics. *Australian Health Review*, *36*(3), 290–295. JOUR. http://doi.org/10.1071/AH11085

Russell, D. J., Wakerman, J., & Humphreys, J. S. (2013). What is a reasonable length of employment for health workers in Australian rural and remote primary healthcare services? *Aust Health Rev*, *37*(2), 256–261. Journal Article. http://doi.org/10.1071/AH12184

Savery, J. R. (2015). Overview of problem-based learning: Definitions and distinctions. *Essential readings in problem-based learning: Exploring and extending the legacy of Howard S. Barrows*, 5-15.

Schoo, A. M., McNamara, K. P., & Stagnitti, K. E. (2008). Clinical placement and rurality of career commencement: a pilot study. *Rural Remote Health*, *8*(3), 964. Journal Article. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/18652526

Schoo AMM, Stagnitti K, McNamara K. (2012). The evolution of a state-wide continuing education programme for AHPs: An action research approach. *Tools for Continuing Professional Development (2nd Ed).* Eds: Chia Swee Hong, Deborah Harrison. London: Quay Books 2 (Chapter 14, pp.183-202).

Strasser, R., Hogenbirk, J. C., Minore, B., Marsh, D. C., Berry, S., Mccready, W. G., & Graves, L. (2013). Transforming health professional education through social accountability: Canada's Northern Ontario School of Medicine. *Medical Teacher*, *35*(6), 490-496.

Speech Pathology Australia (2015). *Scope of Practice.* Retrieved from http://www.speechpathologyaustralia.org.au/spaweb/Document_Management/Public/SPA_Documents.aspx#anchor_scope

Tesson, G., Curran, V., Pong, R., & Strasser, R. (2005). Advances in rural medical education in three countries: Canada, the United States and Australia. *Education for Health: Change in Learning & Practice (Taylor & Francis Ltd)*, *18*(3), 405–415. JOUR. Retrieved from http://www.ezpdhcs.nt.gov.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=rzh&AN=106089671&site=eds-live&scope=site

Thompson, S. L., Chenhall, R. D., & Brimblecombe, J. K. (2013). Indigenous perspectives on active living in remote Australia: a qualitative exploration of the socio-cultural link between health, the environment and economics. *BMC Public Health*, *13*, 473. Journal Article. http://doi.org/10.1186/1471-2458-13-473

Tong, A., Flemming, K., McInnes, E., Oliver, S., & Craig, J. (2012). Enhancing transparency in reporting the synthesis of qualitative research: ENTREQ. *BMC medical research methodology*, *12*(1), 1.

Wakerman, J., & Humphreys, J. S. (2011). Sustainable primary health care services in rural and remote areas: Innovation and evidence. *Australian Journal of Rural Health*, *19*(3), 118–124. JOUR. http://doi.org/10.1111/j.1440-1584.2010.01180.x

Wakerman, J., & Humphreys, J. S. (2013). Sustainable workforce and sustainable health systems for rural and remote Australia. *Med J Aust*, *199*(5 Suppl), S14-7. Journal Article. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/25370086

Walters, L., Greenhill, J., Richards, J., Ward, H., Campbell, N., Ash, J., & Schuwirth, L. W. (2012). Outcomes of longitudinal integrated clinical placements for students, clinicians and society. *Medical education*, *46*(11), 1028-1041.

Weech-Maldonado, R., Elliott, M. N., Pradhan, R., Schiller, C., Hall, A., & Hays, R. D. (2012). Can hospital cultural competency reduce disparities in patient experiences with care?. *Medical care*, *50*, S48.

Worley, P., & Murray, R. (2011). Social accountability in medical education–an Australian rural and remote perspective. *Medical Teacher*, *33*(8), 654-658.