Public awareness of speech-language therapy services and the communication support needs of New Zealanders

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"Ko te tohu o te rangatira, ko tōnā reo
Tū kaha tū māia ki tōnā ao
Nā te aituā, mate tīnana
ka pā ki te kōrero o te tangata
Ko te ora o te rangatira, ko tōnā reo
Tō mātou mahi he awhi, he ārahi
i te hunga hauā ki Te Ao Tūroa
Ko te kai o te rangatira ko te kōrero"

"The sign of a person is reflected in his language
Standing strong and tall in this world
Accident and illness
affect the communicating abilities of the person
The wellness of a person is reflected in his voice
Our work is to support, guide and teach people
with disabilities in today's changing world
Communication is essential to how we live"

(Haupapa, 2019)

The Lord is my shepherd; I shall not want. (Psalm 23:1)

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Abstract

Aims: The current study explored the Aotearoa New Zealand public's awareness about the speech-language therapy profession. The study also aimed to identify the knowledge, experiences and attitudes of New Zealanders towards individuals with speech, language and communication impairments, and their communication support needs. Furthermore, the study set out to contrast the current levels of public awareness about speech-language therapy in Aotearoa New Zealand with findings from international studies which have consistently reported low levels of awareness about the profession.

Methods: The questions developed for this study were based on similar previous research with the final survey consisting of three sections. These assessed participant demographics (section A), awareness about speech-language therapy/therapists (section B), and attitudes towards speech therapy and communication disorders (section C). A variety of question formats were used. These included open-ended questions, closed questions, multiple choice responses, rating questions and Likert scales. The survey consisted of 33 questions in total and it took approximately 8-10 minutes to complete. The data was collected online using the Qualtrics XM survey platform. A brief study advertisement which included a clickable link to the survey was circulated among the general public in Aotearoa New Zealand via a variety of online channels.

Results: The responses from 800 fully completed surveys were analysed. A majority of participants indicated that they had never heard or read anything about speech-language therapists and had never met a speech-language therapist. Similarly, low levels of knowledge were indicated regarding the work settings, the client age demographics and communication impairments with which a speech-language therapist works. The participants' responses reflected low or moderate

levels of understanding about the roles and factors involved in speech-language therapy as well as speech-language therapists' scope of practice.

Conclusions: Overall, the results indicated a less than desirable level of understanding among the general public about speech-language therapy and individuals with speech, language and communication needs. These Aotearoa New Zealand-based findings were consistent with the research conducted in a variety of countries over the past three decades. That is, the awareness of the general public about the speech-language therapy is low to moderate. These findings may inform and support the development of initiatives designed to improve the awareness of speech-language therapy and the needs of individuals with communication impairment.

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List of Abbreviations

AAC - Augmentative and Alternative Communication

ASHA -American Speech-Language-Hearing Association

CST - College of Speech Therapists

EMG – Electromyography

HPCAA - Health Practitioners Competence Assurance Act

LIC - Language-in-the-classroom

NHS - National Health Service

NZSTA -New Zealand Speech-Language Therapists Association

PD - Parkinson's disease

RCSLT- Royal College of Speech and Language Therapists

SAC - Speech-Language & Audiology Canada

SGDs - Speech-Generating Devices

SLCN - Speech, language and communication needs

SLT – Speech- Language Therapy/ Therapists

SPA - Speech Pathology Australia

TA - Thematic analysis

UNHS- Universal Neonatal Hearing Screening

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Introduction

The research project aimed to examine the knowledge and awareness of the general public in Aotearoa New Zealand regarding the speech-language therapy (SLT) profession and the needs of individuals with speech, language and communication impairment. The importance of this research lies in the fact that similar international studies have been conducted; however, no Aotearoa New Zealand-specific data is reported in the literature. The current study findings will have the potential to support initiatives that aim to increase public awareness, knowledge and positive attitudes towards the individuals who experience speech, language, and communication impairment.

This introductory chapter of the thesis provides a historical summary of the SLT profession, which includes mentioning of notable individuals in the field and descriptions of several national professional organisations dedicated to supporting SLT. This is followed by a discussion of the current scope of practice and services provided by speech-language therapists (SLTs) practising in Aotearoa New Zealand and internationally.

1.1 History of the SLT Profession

Understanding the history of SLT can provide insights from the past, help make predictions about the future, and provide a perspective for better comprehension of existing ideas and practices (Duchan, 2011). Knowledge of the history behind current practising theories will further develop the requisite reflective outlook regarding current clinical practice. Furthermore, a constructive historical perspective develops the confidence to systematically examine and modify certain current practices which may require change. A historical awareness of the profession highlights that although some of today's ideas and strategies may continue to exist, many are expected to be

modified, redesigned, or updated with newer strategies which are more in accordance with what unfolds in the future (Duchan, 2011).

According to Minifie (1994), the roots of communication disorders dates back to the Old Testament in the Holy Bible, where Moses was commissioned by God to lead the children of Israel, wherein Moses protests:

> *"Oh Lord, I have never been a man of ready speech, never in my life, not even now that Thou has spoken to me, I am slow and hesitant of speech." The Lord said to him ..." Go now; I will help your speech and tell you what to say." (4 Exod. 10-12).*

Aristotle (1910) in his 'History of Animals' wrote as follows:

> *"Viviparous quadrupeds utter vocal sounds of different kinds, but they have no power of converse. In fact, this power, or language is peculiar to man. For while the capability of talking implies the capability of uttering sounds, the converse does not hold good. Men that are deaf are in all cases also dumb; that is, they can make vocal sounds but cannot speak. Children, just as they have no control of other parts, so have no control, at first, over the tongue; but it is so far imperfect, and only frees and detaches itself by degrees, so that in the interval children for the most part lisp and stutter". (p. 126)*

However, the SLT profession is relatively new when compared to disciplines such as medicine and education.

1.2 The Beginning of Rehabilitation in the Field of SLT

Rehabilitation is indeed a comparatively recent concept. During World War I, only minimal attention was given towards rehabilitation of injured individuals. Soldiers were sent home

when they were medically stable (Fogle, 2008); it was not a matter of concern for the medical staff regarding how they (soldiers) functioned when they returned. It was not until after World War II that rehabilitation of injured persons became an important concern of their overall treatment (Fogle, 2008).

During the years following World War II, American society realised the need to support injured men and women with appropriate rehabilitation services, which eventually led to the formation of speech, language, and hearing services in military hospitals during wartime and in Veteran Administration medical centres post-war (Minifie, 1994; Robb, 2018). Many veterans of World War II were injured and/or traumatised and exhibited speech and language impairments which eventually marked the increased need for SLT services and resulted in the expansion of the field (Robb, 2018).

Many individuals worked to develop similar services in medical centres and community agencies once those individuals who staffed military programs returned to their civilian life (Minifie, 1994). In the three decades post World War II concerns emerged about children with disability. These concerns were rooted in the philosophy of providing children with assistance to reach their potential. Thus, a consistent expansion in speech and language services was noted in public schools too, which substantially increased the need for qualified SLTs. This eventually led to the establishment of university training programs to support the developing workforce (Minifie, 1994).

The profession evolved, and disciplines such as biology, medicine, psychology, linguistics, rhetoric, physics and education were among the influential components that provided the foundation for SLT (Robb, 2018). Professional titles such as ‘speech-language therapist’ were not

given to the professionals initially. The modern roles served by SLTs were historically carried out by teachers, medical practitioners and researchers who supported individuals with speech and hearing difficulties (Robb, 2018).

1.3 Pioneers in the Field of SLT

Several notable pioneering contributions were made in the emergence and development of the field of SLT (Robb, 2018) and their influence on the profession is still apparent today. John Thelwall (1764-1834) was a pioneer speech scientist and therapist from the United Kingdom (Robb, 2018). His radical political speeches made him quite notable. His professional activities and writing mainly related to elocution, language acquisition, anatomical structures involved in speech production, and also the association between speech and mental illness. He was the pioneer in classifying speech disorders either as natural (biological) or behavioural (functional).

Alexander Melville Bell (1819-1905) and Alexander Graham Bell (1847-1922) were father and son, and esteemed English scientists and inventors. 'Visible speech' was a transcriptional system designed by Melville Bell, which consisted of physical movements associated with the head and neck while producing individual speech sounds. Later, Alexander Graham Bell published the transcription system that was used for educating teachers of individuals with hearing impairment.

Henry Sweet (1845-1912) was a pioneer in designing the Broad Romic symbol system which ultimately led to the development of the International Phonetic Alphabet. Hermann Gutzmann (1865-1922) supported in burgeoning the field of 'Logopedics', the science that deals with children with speech deficits. William Wundt (1832-1920), also known as 'Father of Experimental Psychology', was a pioneer in developing the science of psychophysics, which

formed the basis for hearing testing. Edward Wheeler Scripture (1864-1945) developed threshold testing magnitude estimation in hearing measurement. He also wrote a book comparing lisping with stuttering or "super-energetic versus sub-energetic" speech production. The original audiometer and the measurement of sound using decibel (dB concept) was developed by Carl Seashore (1866-1949). Lee Edward Travis (1896-1987) known as the "Father of Speech-Language Pathology" was an expert in the area of stuttering (Robb, 2018). Through the work of these individuals and others, the SLT discipline has become a recognised profession in many countries throughout the world.

1.4 The Expansion of SLT Profession

In the United Kingdom (UK) the field received public attention after the publication of a book called "The Disorders of Speech" (Wylie, 1894). An interest in communication impairments and the field of SLT existed before this; however, this publication made a significant impact. Practising SLTs during the 20th century was mostly self-taught and consisted of elocutionists and medical practitioners. The Central School of Speech Training and Dramatic Art (Central School), which later founded an independent Department of Speech Therapy in 1925 began the formal educational training for these individuals (Royal College of Speech Language Therapists, 2020).

Between 1926 and 1932, hospital-based speech and language therapy training was founded in London, UK. In 1928, an SLT education programme began in Glasgow, Scotland which became the Glasgow School of Speech Therapy in the 1930s. The establishment of the College of Speech Therapists (CST) in 1945, led to three-year educational programs commencing across the UK In the early period, SLTs were mainly engaged in voluntary/private practices, and gradually during the 20th century they were starting to be recruited by hospitals, educational authorities, and schools

for children with special educational needs, and by the National Health Service (NHS) (RCSLT, 2020).

During the 1930s, two distinct professional bodies were established in the UK. These were the Association of Speech Therapists which represented SLTs as "artistic" groups, whereas the British Society of Speech Therapists represented SLTs as "medical" groups. Even though their views were different, both emphasised qualified practices as central to their professional roles and decided to merge after World War II.

In 1945, the CST was established and was later retitled the College of Speech and Language Therapists in 1991. In 1995 the organisation received the Royal title, and then was known as the Royal College of Speech and Language Therapists (RCSLT) that it is known as today (RCSLT, 2020). The SLT profession played a role with the UK's royal family, which has since been highlighted in literature and in a film titled "The King's Speech". King George VI, who stuttered, was supported by Lionel Logue, an Australian SLT, across three decades (the 1920s to 1940s). Mr Logue was bestowed the title of Commander of the Royal Victoria Order for his work. He was also a founder fellow of the unified College of Speech Therapists. Mr Logue also asked King George VI to become the College's royal patron. Queen Elizabeth became a patron of the professional organisation in 1959 following the King's death. Her Royal Highness, the Countess of Wessex, followed Queen Elizabeth and became the patron of RCSLT in 2003 (RCSLT, 2020).

According to Robb (2018), modern SLT practice is considerably different from early SLT practices. This is due to the advancements and use of empirical research in the disciplines that support SLT practice. These disciplines include linguistics, medicine, and psychology. Government health and education policies and technology developments have also shaped the profession's growth and development. Initially, practitioners served individuals who experienced

stuttering, aphasia and children with birth conditions such as cleft lip and palate; however, the diversity of supported individuals continues to expand in various clinical areas. For example, developmental conditions such as autism spectrum disorder, cerebral palsy, and genetic-based conditions. Additionally, individuals with diverse acquired conditions such as aphasia, dementia, dysarthria, dysphagia, and voice-related disorders were treated (Robb, 2018).

1.5 Professional Organisations in SLT

The number of SLTs in the profession has grown exponentially over the past few decades. This has led to the formation of professional associations in many countries. These include the American Speech-Language and Hearing Association (ASHA) in the United States of America; the Royal School of Speech and Language Therapists (RCSLT) in the United Kingdom; Speech-Language and Audiology Canada (SAC) in Canada; the Indian Speech and Hearing Association (ISHA) in India; Speech Pathology Australia (SPA) in Australia; and, the New Zealand Speech-Language Therapists' Association (NZSTA) in Aotearoa New Zealand (Robb, 2018). A brief overview of some of these organisations are provided here.

1.6 American Speech-Language-Hearing Association (ASHA)

Originally named the "American Academy of Speech Correction" in 1925, the association has changed its name four times. Currently, it is named the American Speech-Language-Hearing Association (ASHA) (American Speech-Language-Hearing Association, 2020a). Since its inception, the association has grown from 25 original charter members to 211,000 members in 2020 (ASHA, 2020a). The organisation provides a variety of services and guidance for both Speech-language Therapy/ Pathology and Audiology professions. An example of ASHA's role includes specifying the entry requirements for people entering the profession and certifies

university training programs. ASHA also promotes professional recognition through governmental agencies, private groups which support human services and the general public. It also provides opportunities and resources to support continuing education and offers guidelines for ethical clinical practice.

1.7 Royal School of Speech and Language Therapists (RCSLT) in the UK

Initially, the organisation was known as the College of Speech Therapists (CST) (RCSLT, 2020). It was established on 6th January 1945; and renamed in 1991, as the College of Speech and Language Therapists. In 1995 the organisation received the Royal title and thus became the Royal School of Speech and Language Therapists (RCSLT). The organisation consists of more than 16,000 members (Council, 2019).

1.8 Speech Pathology Australia (SPA)

In 1931, the first Australian speech-language pathology clinic was located in Sydney (Speech Pathology Australia, 2020). The Australian College of Speech Therapists was established in 1949 and later changed to the Australian Association of Speech and Hearing. In 1966, the association became the Speech Pathology Association of Australia with Speech Pathology Australia as its public name. The latest revision was made in June 2002 when the Speech Pathology Association of Australia was renamed 'The Speech Pathology Association of Australia limited'. However, Speech Pathology Australia remains as the public name. This association currently has over 10,000 members (Speech Pathology Australia, 2020).

1.9 History of SLT profession in Aotearoa New Zealand

The history of the SLT profession in Aotearoa New Zealand began in the early 19th century. Some of the highlights include the establishment of three speech classes in 1922 by Mr Stevens, the Principal of the Government schools for the deaf (Saunders et al., 1971). In 1940, a clinic solely

for children who experienced speech impairments began. From 1943 onwards, new clinics were opened in rapid succession as trained SLTs became available to provide services. Early speech therapy intervention was reported to take place with children who were stutterers and hearing impaired. One of the earliest noted milestones was the first conference attended by all the SLTs across the country. This was held in 1946 at Christchurch. From there, the profession began to flourish in Aotearoa New Zealand.

1.10 New Zealand Speech-Language Therapists' Association (NZSTA)

The New Zealand Speech-Language Therapists Association (NZSTA) is the national organisation for SLT professionals in Aotearoa New Zealand. The organisation was established in the 1940s to support speech therapists working in Aotearoa New Zealand. The organisation's role includes the provision of professional development opportunities, resources, communication, accreditation of the SLT training programs provided by three universities, and it also reviews and accredits the qualifications of migrant SLTs. The development and administration of a Code of Ethics and Scope of Practice are some of the additional roles of the organisation (NZSTA, 2020). The profession in Aotearoa New Zealand is not registered under the Health Practitioners Competence Assurance Act 2003 (HPCAA); hence there is no requirement for practitioners to become members of the NZSTA or another registration body currently. Despite this many practising SLTs are members of the association. The organisation consists of 900 members in total (NZSTA, 2020).

The next section is going to discuss the scope of practice of SLTs.

1.11 Present Day Scope of the SLT profession

Scope of practice statements helps to define the roles and responsibilities of a profession. These statements are sometimes included in laws that support the licensing of an individual for professional practice. Scope of practice also documents whether a professional provides a particular service appropriately, for instance, whether or not the professional should be paid for the particular service provided (Minifie, 1994).

The aims of the scope of practice in SLT, according to ASHA (2020a) is:

1. Delineating areas of professional practice;
2. Providing information about the professional responsibilities of qualified practitioners to health care professionals, educators, payors, regulators, and members of the public;
3. Providing support to SLTs in the delivery of professional, evidence-based services for individuals who experience difficulty in communicating, feeding, and/or swallowing.
4. Supporting SLTs to undertake research and share findings of research; and
5. Guiding the pre-service training and professional development of SLTs so they can provide effective and ethical services.

According to the NZSTA, SLTs are the professionals whose scope of practice includes supporting speech and language development in children and young people, as well as communication support and rehabilitation for adults with a range of education and health needs. The population that falls under their service provision includes individuals from the neonatal stage through to the geriatric stage of life (Speech Pathology Australia, 2020; NZSTA, 2012).

As mentioned, SLTs work in various professional contexts. Internationally, the main contexts are health (e.g., hospitals and rehabilitation units) and education (e.g., early childhood centres, schools). SLTs can also be found working in diverse contexts such as mental health

facilities, clients' homes, non-governmental organisations, criminal justice contexts, voluntary organisations, and corporate and industrial settings. SLTs also work in universities where they teach and supervise students (clinical educators) and facilitate research into the field, which also supports the ongoing expansion of the profession's scope of practice.

SLTs are involved in the processes of prevention and wellness, screening, assessment, diagnosis, treatment, management, counselling and follow-up of individuals who experience difficulties with language comprehension and/ or expression, speech sound production, fluency, speech resonance and voice, swallowing and aerodigestive processes, as well as a number of cognitive processes. The following section elaborates on the different processes in which SLTs are involved.

Prevention and Wellness

As described above, an SLT plays a significant role in minimising the risk of individuals developing or experiencing speech, language and communication disorders.

Article II of ASHA's Bylaws specifies that:

> One of the "…*purposes of this organization shall be to…promote investigation and prevention of disorders of human communication*…." (ASHA, 2017, p.9)

As per the goal of ASHA, an SLT can help in increasing the awareness of the causes and onset of communication disorders and can provide support for individuals to optimise their personal communication. For example, this could be achieved through educating and identifying potentially harmful and detrimental behaviours such as smoking and the role of excess noise exposure (ASHA, 2020b). 'Wellness' is a key lifespan concept which relates to the optimal level of communication competence throughout life. The focus of education efforts is to identify and

increase awareness of factors that increase the risk of communication difficulties and/or swallowing problems. Early identification and intervention come secondary to the prevention of serious secondary complications of unidentified speech and language disorders. SLT prevention activities aim to reduce the occurrence of a new disease or condition, identify disorders or diseases early and reduce the impact of a disability due to an existing condition (ASHA, 2020b). Community-based prevention programs provide a vehicle for SLTs to lessen the incidence of spoken and written communication and swallowing difficulties.

Screening

Screening involves standardised procedures to identify individuals who are either at risk of or who may have a communication disorder and should be considered for a full diagnostic process. Screening processes are generally directed towards a general population or specific "high-risk" groups (e.g., a family history of speech and hearing disorders, very low birth weight, neonatal infections, low APGAR scores etc.). For example, the universal neonatal hearing screening programs (UNHS) is a screening procedure carried out internationally to detect hearing difficulties in infants within the first three months. If the presence of hearing loss is identified in early infancy, intervention strategies can be implemented to utilise the critical period for language development. According to Yoshinaga-Itano (2004), eighty percent of children with hearing impairments, if provided with adequate early intervention, can develop age-appropriate speech and language skills.

Such screenings encourage efficient and cost-effective referrals for necessary follow-up. During the process of screening, the SLT will select and use suitable instrumentation for the screening. They establish screening protocols that are based on evidence-based methods. SLTs co-ordinate and execute screening programs across a wide range of health, education, and community settings. SLTs also review and analyse records (e.g., medical or educational) and, when

appropriate, referral based on the results of screenings. Finally, SLTs consult with others on screening tests completed by other professionals and use data to inform population health decisions.

Diagnosis/Evaluation

In-depth evaluations should be carried out for individuals (children and adults) who exhibit symptoms of communication disorders based on the screening tests or concerns of family members or other professionals (Minifie, 1994). A comprehensive evaluation often includes investigating an individual's skills in specific areas to determine the nature and extent of any impairment, recommendations of any additional diagnostic studies or intervention strategies; setting baselines by which intervention outcomes can be measured, and providing counselling to the patient, family, and other professionals' in the patient's care.

During the process of evaluation, SLTs administer standardised and/or criterion-referenced tools (Owens et al., 2018). SLTs also review medical reports to identify pertinent health and pharmacological information (Owens et al., 2018). Clients or families will be interviewed to collect case histories to help form a holistic understanding of the client. SLTs undertake assessment protocols that are culturally and linguistically appropriate and undertake behavioural observation for understanding individual's skills in a natural context. SLTs will also diagnose various communication and swallowing disorders. The professionals in a hospital setting, for example, use endoscopy, videofluoroscopy and various other instruments to measure various aspects of resonance, velopharyngeal function, voice and swallowing ability. Similarly, SLTs carry out assessment and trials to support the selecting of Augmentative and Alternative Communication (AAC) interventions (ASHA, 2020d). This may involve identifying the opportunities to use technologies such as speech-generating devices (SGDs).

Furthermore, SLTs also participate in meetings following the required governmental laws and regulations (e.g., IDEIA [2004] and Section 504 of the Rehabilitation Act of 1973). As part of the comprehensive assessment process, SLTs document assessment results, develop treatment plans, make recommendations as well as considering discharge plans. SLTs who work with children also discuss criteria for discharge from early intervention and education services.

Treatment/Therapy

SLT aims to support clients to achieve the most effective communication possible. This may include aiming for near-normal speech, language and communication abilities, to develop the use of compensatory techniques for any communication impairment (Minifie, 1994). Taking steps to identify and reduce attitudinal obstacles present in communication between individuals with communication impairment and others is another crucial aim of SLT service provision. Hence, SLTs are involved in developing and implementing clinical services that include the practice most likely to support success with the relevant setting; providing services that align with the cultural and linguistic needs of the clients (Owens et al., 2018); undertaking evidence-based practice with practitioner skills and experience along with individual needs and values in intervention goal establishment; ensuring treatment data is used to guide decision and service effectiveness; integrating academic materials and goals; undertaking treatment practices within the professional's scope of practice; utilizing AAC for guiding clinical decisions and deciding treatment effectiveness; and finally, collaborating in service delivery with other professionals (e.g., education, health and allied health practitioners).

Treatment modalities, technology and instrumentation

SLTs uses various technology/instrumentation for the process of assessment and support of individuals with communication and/or swallowing difficulties. SLTs are interested in studying

and developing innovations and adapting their expertise towards the use of sophisticated instruments and techniques to increase the efficiency of the services provided. Listed below are some examples, but not limited to, the use of:

- Augmentative and Alternative Communication (AAC), technologies which support individuals with communication impairments by permitting them to communicate effectively within their environment and society;

- Endoscopy, videofluoroscopy, fibre-optic evaluation and other instrumentations for evaluating various facets of voice, resonance and velopharyngeal functions;
- Ultrasound and other biofeedback systems to evaluate and intervene the individuals with disorders in speech sound production, voice and swallowing;

- Telepractice which entails the use of telecommunication technologies to deliver clinical services distantly; and
- Other appropriate modalities (sign languages etc.).

Counselling

An SLT can provide counselling support which involves the guidance and support for individuals who experience communication difficulties and their families (DiLollo & Neimeyer, 2020). During the process of counselling, an SLT may encounter clients' varying emotional states, thoughts, feelings and behaviours which results from living with conditions such as communication, feeding and/or swallowing difficulties (ASHA, 2020b). For example, the following counselling activities are used by SLTs with individuals with communication and/or swallowing disorders and their families. SLTs will enable the individuals, together with their families, to make decisions regarding communication, feeding and swallowing issues (Erlichman,

1989). The SLT will then educate these individuals regarding communication or feeding and swallowing difficulties; facilitate support and/or peer-to-peer groups for individuals with communication disorders, and their families, and help clients and their families on how to become self-advocates. SLTs will also discuss, assess, and address negative emotions and thoughts relating to disorders of communication or feeding and swallowing. When counselling needs fall outside those related to (a) communication and (b) feeding and swallowing, the SLTs should generally support individuals to contact other appropriate professionals (ASHA, 2020d).

Counselling and treatment are often inseparable (Minifie, 1994). However, there are other types of counselling services which can be differentiated and assist patients to seek help on other areas in which they need support; for instance, psychotherapy, vocational guidance, or special education. The other services are for assisting families and "significant others" to implement the treatment goals in communicating with the patient (Minifie, 1994).

Consultation

These services are aimed at other professionals (Minifie, 1994). There are two general types of consultations an SLT takes part in. One is directed towards other professionals in participating effectively in specific patient care. The second is more general and focused on improving the overall understanding of communication disorders and the role of a professional in assisting individuals with speech, language and communication impairment. For example, SLTs consult with classroom teachers to manage a child or children. Furthermore, consultation with teachers will involve discussing general concerns relating to the identification of children with problems in written and spoken language, communication disorders, and/or for planning language-development or compensatory activities that need to be carried out in classrooms.

SLT practice extends to additional areas as well. These include the development and implementation of augmentative and alternative forms of communication (AAC) and prescribing AAC devices and systems (ASHA, 2020d; NZSTA, 2012). The use of instruments such as videofluoroscopy, Electromyography (EMG), nasendoscopy, stroboscopy and computerised instruments to observe, collect, and analyse data relative to communication and swallowing functions (ASHA, 2020b). Likewise, SLTs select, fit, and train in the use of prosthetic devices for communication and swallowing (ASHA, 2020d). SLTs collaborate in the assessment and treatment of central auditory disorders associated with communication disorders. Also, SLTs educate and counsel individuals, families, co-workers, educators, and other professionals about communication disorders and swallowing. Furthermore, SLTs promote public awareness about communication disorders and their assessment and treatment about removing barriers to individuals with such disorders. SLT practice also involves collaborating with other professionals and making referrals when they are in the best interests of individuals being served. Finally, serving ethnoculturally diverse populations with communication and swallowing disorders with procedures that are suited or modified for their cultural background (Battle, 2012).

1.12 Goals of SLT Practices

The following are specific goals of SLT practices (NZSTA, 2020):

- Identifying and specifying the presence of communication and/or swallowing disorders;
- Improved functioning of communication and/or swallowing and related improvement in general health, well-being and quality of life;
- Maintenance of existing levels of communication skills and/or swallowing;

- Reducing risks which are linked with communication or swallowing impairment in people who are potentially vulnerable. For example, people who might be anxious about their communication or swallowing difficulties;

- Improving knowledge and understanding through educating clients and whānau/family through educators and wider communities (e.g. Justice System, Child Youth and Family Services); and
- Accessing and participating in various communication environments which include the health, education, social, family, work and community.

1.13 Models of Service Provision

SLTs utilise several models or approaches to service provision depending on their setting (Fogle, 2008; NZSTA, 2012). For example, early intervention services could be provided in a child's natural contexts (home, preschool), through clinic-based services, and by supporting the knowledge and skill development of educators, parents/caregivers or others involved in the child's life. This work regularly involves working in partnership with others (NZSTA, 2012; Speech Pathology Australia, 2020). Finally, service provision can also include telepractice, which entails the use of telecommunication technologies to deliver clinical services distantly by connecting the SLT to the client, caregiver or other person(s) accountable for providing treatment to the client for assessment, diagnosis, case review and/or referral purposes.

1.14 Systems and Population

Apart from the direct responsibilities listed, SLTs are involved in population management to promote better education and health which enhances the experience of the persons served, and in certain circumstances reduces care expenses (ASHA, 2020b). Delivering efficient and effective

clinical practices are also included as further responsibilities of an SLT (Robb, 2018). In addition, the changing work environment demands, and expectations are also met by SLTs. The SLT:

- Uses simple terms (language) to promote effective discussion for health changes and outcomes related to education;
- Interacts with other professionals for individuals with speech, language, and communication impairment in improving their communication skills;
- Analyses and improves communication environments for enhancing care experiences;
- Minimises treatment costs by designing and executing function-focused case management approaches and through supporting individuals to accomplish their goals via the combination of direct intervention, supervision and interaction with other service providers and through individual and family involvement in self-management techniques;
- Serves in tasks tailored to fulfil the desires and demands of an evolving job environment;
- Co-ordinates services of target populations via improving communication between individuals and other professionals;
- Advises families and early childhood service providers on approaches and resources to promote preverbal and verbal communication development by young children; and,
- Supports teachers in schools to develop approaches that improve student access to modules.

1.15 Service Delivery in SLT

The awareness and knowledge about the disorders for which an SLT provide intervention is crucial as the general public can consult these professionals (SLTs) on-time when required without any delay. The practice area in SLT continuously evolves and gets broadened into wider

domains. The areas of practice include language, speech, fluency, voice, feeding and swallowing. Additional related areas include cognition, resonance and auditory habilitation/ and or rehabilitation (ASHA, 2020d; NZSTA, 2012).

Language-related difficulties may include those linked to areas such as pragmatics, semantics or grammar (ASHA, 2020d). SLTs also support children and adults who experience difficulty learning to read and spell. The area of speech sound production includes the articulation of speech sounds. Apraxia of speech is a condition that results in impreciseness and inconsistency while speaking in the absence of any neuromuscular deficits. Dysarthria is caused due to muscle weakness and thus results in speech disorder. Fluency disorders mainly constitute stuttering and cluttering. The voice disorders consist of disorders affecting various aspects of phonation quality, pitch, loudness, and respiration. Conditions related to resonance include hyper-nasality or hypo-nasality (ASHA, 2020b; NZSTA, 2012). SLTs provide interventions for several feeding and swallowing disorders and upper aerodigestive disorders (e.g., infant feeding). SLTs support individuals having difficulty with certain language-related cognitive functions such as poor attention, memory, problem-solving, and sequencing skills etc. SLTs also provide auditory habilitation and or rehabilitation for those individuals affected by hearing impairment and in the area of auditory processing (ASHA, 2020d; NZSTA, 2012).

There are additional services which come under the scope of practice of an SLT. These include but are not limited to speech communication by members of the transgender community, healthy vocal practices by a range of professionals who rely on voice use (e.g., singers and teachers), business communication, and accent/dialect modification (ASHA, 2020d).

The disorders mentioned above are not an exhaustive list for all practise areas; however, these are the major disorders that an SLT works with.

1.16 The Team Approach/Collaboration

SLTs working with individuals with communication disorders are often part of a wider professional team and will collaborate with other professionals and the client's family members (Owens et al., 2018). The team always has at least two members which include the client and the clinician. In this, the client has prime importance as there will be no need for any other team members without the client. Family members of the client, the clinician's supervisor or administrator, teachers and reading specialists are some crucial members present in the team in most cases. However, based on the need of the client or patient and the setting, some other members are included in the team. To name a few, this includes health professionals such as doctors, nurses, physiotherapists, occupational therapists, and audiologists, psychologists and many other professionals who are involved directly in helping the client (Minifie, 1994).

Team members vary according to the settings. To illustrate, (a) in university clinics, the potential team members include client, family, student clinician, and supervisor. (b) In schools: child, family, school SLT, and classroom teacher. (c) In hospitals: patient, family, doctor, nurse, speech-language therapist, physiotherapist, and occupational therapist.

Many other individuals who are indirectly involved in supporting the clients should not be ignored. These include secretarial and administrative staff, custodial and maintenance workers, dietitians and kitchen workers etc. These individuals are often least acknowledged for their contributions and are often "behind the scenes". Inaccuracy in the functioning of any of these individuals will affect the client whom the SLT is serving. This, in turn, helps to realise how important these individuals are. Therefore, as a communication specialist, it is an SLT's responsibility to appreciate these support workers who are a crucial part of the big picture of helping individuals with communication disorders.

Developing a collaborative culture is inevitable and is a responsibility of SLTs towards other working professionals (Cummings, 2018). The collaboration includes mutual coordination and collective decision-making between all group members, including individuals and families, to produce better service quality and efficient outcomes for the people served. Upon discussing the distinct responsibilities of members of the team, professionals are morally and responsibly obliged to decide if they do have adequate knowledge and skills to undertake such services. Commitment is reflected across all dimensions of SLT.

1.17 Domains of Professional Practice

The domains of professional SLT practise comprise a collection of competencies and expertise. The areas addressed in this domain of professional practice include advocacy, supervision, teaching and research, and administration and leadership. Each of these areas are briefly described below.

Advocacy

Advocacy includes encouraging and enabling access to information. This involves the lessening of societal, cultural, and linguistic barriers for clients. SLTs carry out campaigns for the individuals and for the profession. Advocacy also includes strategies to prevent communication disorders, cultural recognition activities, strategies to improve health literacy, improving academic literacy, promoting schooling, increasing civic engagement, and conducting useful training programs.

Supervision

Supervision is a well-defined professional area that encompasses education, mentoring, motivation, counselling and assistance in all oversight positions. All SLTs are encouraged/required to engage in supervision. It is the obligation of SLTs, and it crosses health, organisational, and

scientific dimensions. SLTs provide supervision to individuals such as speech-language pathology assistants, allied health and medical students, and other personnel (e.g., clerical or technical staff). Many SLTs also engage in supervision with SLT peers and colleagues. This form of supervision is an integral part of clinical services delivery by SLTs and helps support both individual development and advancement of the discipline.

Education

SLTs act as instructors, educating students at schools, and as educational practitioners in career development environments through continued training (Cummings, 2018). SLTs also provide education support for families, professionals and policymakers.

Research

The research undertaken by SLTs can cover any of the domains mentioned previously. This research may be carried out as an initiative unique to the facility or maybe orchestrated across several settings. Research activities undertaken by SLTs are compliant with Institutional Review Boards and International laws (Cummings, 2018).

Administration and Leadership

There are various settings in which SLTs carry out programs which include schools, universities, health care contexts and private medical and allied health practices (ASHA, 2020b). The roles and responsibilities in this capacity are likely to encompass personnel and fiscal management, leadership, programme design and innovation, career development, regulatory compliance, and cooperation with other organisations (ASHA, 2020b).

1.18 Becoming a Speech-Language Professional: Models of Education

It is important to know the educational preparation needed to become an SLT as this can motivate and encourage individuals who wish to be a part of this profession as well as make them

aware of the curriculum, hence aiding the decision-making process. The educational preparation required to become an SLT varies from country to country; however, programs do share many commonalities, yet they are not identical. There are two main models of education, the American model and the British model (Cummings, 2018; Robb, 2018). The differences existing between countries follow either one among the following: that is, an American model or a British model. The American model is the one practised in the United States which gives more focus to liberal arts and science education, whereas countries such as the United Kingdom (UK), India, Ireland, Aotearoa New Zealand and South Africa follow the British model. The British model has more focus on essential coursework and clinical competence which are considered most important for becoming qualified SLTs (Robb, 2018).

1.19 Thesis Chapter Outlines

This chapter has introduced the topic and field of SLT, including the history of the profession, the pioneers involved in establishing SLT and their contributions to the field. The chapter then addressed the growth of this discipline that began after the II World War and the current state and scope of the profession. The next chapter reviews literature that has investigated public awareness of SLT internationally, as well as the awareness of SLT among allied professionals. Additionally, the literature on the importance of health literacy in the field of speech therapy and the attitude towards speech and language disorders are also reviewed. The third chapter describes the research methods employed in the current study, which is an online survey. The fourth chapter explains the data analysis procedure and the results obtained. The fifth and final chapter concludes with a discussion of the findings and consideration of study implications, limitations and future research directions.

Literature Review

This chapter reviews the literature that has reported research into the awareness of the SLT profession and communication disorders. These studies have taken place among both members of the general public and allied health and non-health professionals in both developed and developing countries (Breadner et al., 1987; Chu et al., 2019; Lesser et al., 1986; Mahmoud et al., 2014; Uysal et al., 2019). Understanding the levels of awareness among allied professionals is essential as it improves the mutual understanding of professionals regarding each discipline (Lumague et al., 2006). This improved understanding, in turn, helps in delivering effective services to clients. When the healthcare team is cohesive, patient care is likely to be improved. Therefore, it is essential to look at allied professionals' awareness of SLT and communication disorders. Additionally, the literature on the importance of health literacy in the field of SLT and the attitude towards speech and language disorders have been reviewed. The majority of this literature review will focus on the awareness about SLT among allied professionals due to the limited research reporting awareness among the general public.

2.1 Awareness about SLT among the General Public

Public awareness is defined as the widespread understanding and acknowledgement of various areas of relevance or expertise at community and societal levels (Coffman, 2002). Public awareness can help people to work together and share information, expertise, values and objectives. Examples of public awareness include such issues as the positive effects of attending school and education as well as the negative health effects of smoking or eating unhealthy food. Public awareness is also known to influence political decision-making in areas such as funding of public education and health services (Law et al., 2013). Public awareness supports understanding of individual’s needs and rights, which in turn may influence decision-making at the political

levels. As an example, improving public awareness in palliative care could have a range of benefits. These could include supporting an individual's knowledge and confidence in seeking further information about palliative care; increasing understanding of the diversity of the palliative care field; helping individuals to support family member's access palliative services; or increasing the community support and funding for palliative care services (Seymour, 2017).

According to Byrne et al. (2010), improving public awareness regarding the scope of practice of SLTs' will lead to major accomplishments. Increased awareness of SLT practices will help in comprehension of the needs for SLT services, and thereby encourage referrals to SLT services, which in turn may increase patient's quality of life. Secondly, more noteworthy information about the roles of SLTs will empower individuals to effectively become a resource person for the field/profession. For example, an individual who has a sibling with communication impairment and who is experienced and familiar with the work of SLTs is more likely to share this knowledge with others. This, in turn, aids in expanding public awareness of the SLT profession among other interested individuals (e.g., colleagues, peers etc.) (Byrne et al., 2010).

On initial searching, only a few international studies were identified to have undertaken a direct investigation of the public awareness of SLTs and communication disorders. An earlier survey study conducted by Killarney et al. (1981) explored the awareness of speech-language pathology and audiology in a rural population in the United States of America. A 17-item questionnaire was employed to determine the respondents' understanding of an SLT's scope of practice, professional activities, work settings, educational training and own personal experiences with speech, language, and communication disorders. Telephone interviews were carried out for this purpose. The total number of participants who completed the survey was 200 (178 females and 22 males). Results indicated low awareness about the SLT profession among the participants.

A finding of interest was that the person with known speech, language and communication needs (SLCN) were less concerned to consult an SLT due to reasons such as poor knowledge regarding SLT services and due to the unavailability of the professionals. Some individuals did not want any services and hence did not seek any available options. With regard to the existence of a professional organisation for speech-language pathology, respondents believed there was a professional body; however, none of them identified the American Speech-Language-Hearing Association (ASHA). These findings altogether indicate the necessity of improving public awareness of SLT support services available, and how to access those services. As physicians are the significant sources of health referrals, they should be well-informed regarding SLT services.

The authors (Killarney et al., 1981) suggested the need of using strategies such as discussions with allied health professionals, various agencies/organisations, media which includes newspaper, magazines, radio, and television for improving the awareness about the field of SLT. Furthermore, public services announcements, television interviews, talk shows, campaigns, posters and exhibitions, slide shows, fact sheets and brochures can also be considered as various methods to improve awareness. The study results were consistent with the previous study by Pearlstein et al., (1977) which revealed the inadequate knowledge among the public about the professionals who provide various services for people with SLCN (Killarney et al., 1981).

Another early study investigating the public awareness of speech-language pathologists and the services they provide was undertaken in Melbourne, Australia (Parsons et al., 1983). The study was carried out using a modified version of the questionnaire developed by Killarney and Lass (1981). This was modified into a 12-item questionnaire which encompassed Australian cultural differences. The questions in the study were designed to assess participants' knowledge about the professionals who deliver speech-language and hearing services, the professionals'

(SLT's) level of educational training and the work settings. Further topics addressed the personal experiences of the participant and knowledge of resources, and methods to access care when required. The data collection was conducted via telephone interviews, and the study collected 400 responses.

The results indicated that the public had a poor understanding of the SLT profession, and the services offered (Parsons et al., 1983). Findings included the low awareness of the SLTs work settings, the population and disorders that are supported by SLTs, and organisations that offer speech and language services. The study results paralleled the findings from the study by Pearlstein et al. (1977) who investigated the public awareness of speech-language and hearing services in Philadelphia, Pennsylvania. In addition, the study reported the lack of awareness about SLTs and the services offered, among the members of the general public. These findings support the need to educate the public regarding the profession and services offered, alongside awareness programs for the public to access and benefit from speech-language services.

Breadner et al. (1987) carried out a study in London, UK. A total of 264 questionnaires were completed by members of the general public. This study was based on an initial study in London by Husband (1980) with 264 people. This was replicated five years later in 1985 by Breadner et al. (1987) with 252 participants, and results obtained were consistent with the previous study (Husband, 1980). The questionnaire included three sections: (a) respondent characteristics, (b) general knowledge of SLT and (c) knowledge of the communicative disorders. The study found that the publics' knowledge of SLT to be less than what would be ideal for the profession's growth, knowledge and prevention of communication difficulties and the successful provision of services.

Almost half of the population revealed they had not seen, heard or read anything about SLT (Breadner et al., 1987). The study proposed the need to educate the general public by

providing explanations regarding the profession and the professional (SLT) along with the services that are being offered, the diverse disorders that are being assessed and intervened by an SLT, the age group that falls under the scope of practice, campaigns to improve the public awareness, which shall be sought via all possible sources, and interprofessional education (Breadner et al., 1987). All these facts should be addressed to improve the awareness about SLT and therapists among the general public.

A more recent study conducted in Amman, Jordan, involved surveying the general public to determine their knowledge about the SLT profession (Mahmoud et al., 2014). Data collection was carried out using an adapted version of the Breadner et al. (1987) questionnaire and was translated into Arabic and modified to consider cultural factors. Some of the questions included were: 'have you ever read anything about speech-language therapy/therapists?' and 'which populations and what kinds of communicative disorders does an SLT work with?' A total of 1203 participants completed the questionnaire.

The results revealed that respondents' awareness was limited. Almost half of the participant's responses revealed that SLTs were unknown to them. Respondents who made more accurate statements in the questionnaire about SLT/SLTs tended to be females with children and graduates in the field of health and education. Also, the authors reported that general awareness about communication disorders was found to be low. However, respondents noted increased familiarity with fluency and articulation disorders when compared to other communication disorders (e.g., language disorders, social/pragmatic communication disorders). The study concluded stating that the public should be made aware regarding the profession, organisations that provide such services and how to access such services when required (Mahmoud et al., 2014). Similarly, the awareness of conditions in which SLTs are involved in, and the fact that SLTs

support neonates through to the geriatric population could also be highlighted. If this fact remains unknown, the services might go unused. Along with this, spreading awareness through all possible sources but not limited to television, newspaper, posters, lectures, radio interviews, are all crucial (Mahmoud et al., 2014).

Low levels of awareness among the general public were also reported by Turkish researchers (Uysal et al., 2019). Their study participants were the parents of children with speech and language disorders (*N*=189). The questionnaire developed by Breadner et al. (1987) was translated into Turkish. The findings from the study indicated despite having an experience with children with speech and language disorders; parents had poor awareness of SLT professionals and services. For example, 86% of the participants reported that they had never read anything about SLTs. In response to a question about communication disorders and SLT practices, 96% of respondents believed that the SLT intervention mostly involved individuals with stuttering, hearing loss and cleft lip and palate. The authors noted a need for designing appropriate awareness programs to improve the understanding of SLTs and their scope of practice. The study respondents' (Uysal et al., 2019) knowledge of stuttering and speech sound disorders were better when compared to other communication disorders which were similar to the findings reported by Mahmoud et al. (2014).

A recent study by Chu et al. (2019) in Malaysia was conducted to determine the general publics' perspectives on communication disorders and the profession of SLT. The study utilised a self-developed questionnaire which contained questions related to the knowledge and attitudes towards communication disorders and SLT. The study obtained 535 responses from the members of the general public. Key findings included that more than half of the participants had a moderate level of knowledge. About 67% of participants indicated a positive attitude towards individuals

SLCN. Similarly, health care professionals and respondents with higher educational levels showed a similar positive attitude towards communication disorders. However, sociodemographic factors such as age, gender, ethnicity and academic qualification showed no significant correlation with the awareness levels of the participants. The authors suggested that educating the public could lead to improvements in the current practices and expectations in service delivery. Increasing levels of awareness may contribute to improved collaboration among health professions, which in turn, may support better access to, and effectiveness of services to individuals with SLCN.

2.2 Awareness about SLCN in Aotearoa New Zealand

Considering the Aotearoa New Zealand context, there are no studies to date which have directly investigated the public awareness of the SLT profession. However, public awareness of clinical conditions such as aphasia, stroke and Parkinson's disease (PD) have been investigated.

McCann et al. (2013) compared the awareness and knowledge of Parkinson's disease (PD), stroke and aphasia among health professionals with that of the general public. The study employed a brief face-to-face survey to determine the awareness and knowledge about aphasia and its symptoms. For example, questions asked included, "Have you heard of …?" (PD, stroke, aphasia), where have you heard about these disorders? A total of 300 responses were obtained (200 were members of the general public, and 100 were health sector workers). The findings indicated poor awareness of aphasia (30%) among participants. This result was better than the initial study results reported by Simmons-Mackie et al. (2002). However, the aphasia awareness was lower than the awareness for both PD (96%) and stroke (99%).

Results revealed better knowledge and awareness among healthcare professionals compared with that of the general public. Overall, the participants' awareness of these disorders was found to be poorer when compared to an earlier study (10 years ago) that examined the

awareness of aphasia (Simmons-Mackie et al., 2002). Level of awareness and knowledge about aphasia and stroke remained less than desirable even after ten years of the earlier study. The researchers emphasised the need for increasing public and health sector awareness and suggested several strategies to achieve this. These included motivating the individuals with aphasia, their family or friends to self-advocate, conducting public awareness campaigns, educating through media and public speaking in community venues, use of visual and auditory tools for spreading awareness, and finally the need to increase the awareness and support of political influencers McCann et al. (2013).

Bay et al. (2015) carried out another similar study in Aotearoa New Zealand to understand the awareness and knowledge of stroke in an urban population. A structured oral questionnaire was used to assess components such as the awareness of stroke risk factors, symptoms, responsiveness and the prevention behaviours. The total number of responses obtained was 850. A key finding of the study included a variation of awareness of stroke among ethnic groups. For instance, participants from Pacific ethnic groups were less likely to identify a number of risk factors associated with stroke when compared with NZ/European participants. Further, participants from Māori, Pacific and Asian origins were less likely to identify the need for immediate medical care. Participants' level of education was also linked with a poor understanding of stroke and undertaking preventive measures. Inability to recognise and react appropriately to stroke could prolong the need for intervention, which in turn will have a significant economic effect on the direct and indirect costs of long-term post-stroke treatment (Bay et al., 2015).

Increased knowledge about stroke improves the potentiality to identify stroke and thereby reducing prehospital delays and lessens the possibility of death and disability. Bay et al. (2015) concluded by recommending that tailored strategies that identify and address the demands of

various sectors within Aotearoa New Zealand may enhance health outcomes and reduce the potential impact on the patient, community and national levels associated with illness and disability. The findings of this research (Bay et al., 2015) provided strong evidence for the implementation of an educational framework to improve stroke-related health awareness using a method which improves learning for present-day and upcoming generations about life-course risk management, stroke symptoms and effective responses.

2.3 SLT Awareness among Allied Professionals

A number of studies have investigated the awareness of the SLT profession and various communication disorders among allied professionals internationally, in both developed and developing countries. Study participants have included both medical (e.g., physicians, dentists, nurses, pharmacists and paramedical staffs) and non-medical professionals (e.g., teachers and police officers).

A cross-sectional survey was conducted in Sohag, Egypt, to investigate the participants' understanding and attitude towards delayed language development among doctors, dentists, pharmacists and paramedical staff (Mostafa, 2017). A total of 201 responses were obtained. Questions included asking the participants to indicate their source of knowledge regarding delayed language development and best intervention options for children with language impairment etc. The major findings of the study included that physicians were found to have the highest level of awareness regarding delayed language development. Notably, the levels of awareness seemed to be correlated with higher educational qualification. Hines et al. (1987) stated that an individual's educational background and awareness level directly influenced their attitudes and behaviour. Likewise, Mostafa (2017) found that health professionals with higher education levels exhibited greater awareness. When asked about where to refer a parent of a child with delayed language,

most participants recommended seeking medical advice. An interesting finding of the study was that relatives and acquaintances (38.6%) were identified as the major sources through which knowledge about speech and language therapy was sought (Mostafa, 2017). However, these sources could lack specialised knowledge of general child and linguistic development.

A finding that reflected the health professionals' limited understanding of the speech and language difficulties was their assumption that language development occurs mainly via preschool or kindergarten interactions. This, in turn, indicated poor knowledge of language development among health professionals. The study emphasised the need to provide greater education to health professionals. However, Mostafa's (2017) findings were contrary to an earlier survey that examined the views of potential referrers relating to speech-language therapy (Lass et al., 1982). The earlier survey was conducted among physicians (n =51), dentists (n = 74) and teachers (n = 77). The results revealed a limited understanding and awareness among these professionals about SLTs.

The disparity between the findings reported by Lass et al. (1982) and Mostafa. (2017) can be explained by the advent of modern technology, and the use of diverse and varied forms of communication in the 21st century that enable individuals' access to information. Similarly, Sullivan and Cleave (2003) reported some crucial chasms in the understanding of interdisciplinary team members regarding SLTs and the services rendered. Likewise, the exposure of medical students to SLTs and their services were minimal.

Another cross-sectional study was carried out by Van Eyndhoven et al. (2015) in the USA. The study was carried out to understand the knowledge, attitudes, and practices of paediatric dentists regarding speech evaluation of patients and the implications for dental education. The online study involved a 33-item questionnaire consisting of items relating to demographic details

of the respondents, attitude and confidence in speech therapy and the theoretical and practical knowledge of speech development and speech therapy. The findings of the study identified that Paediatric dentists are the professionals having a noticeable impact on the development of dentition in its links with children's development. Therefore, these professionals need to be cognizant of language milestones and language disorders (Van Eyndhoven et al., 2015). Paediatric dentists are well-aware of the oral structures and their development in children as well as their significance related to speech production (for example, a primary incisor extraction could influence the production of speech sounds). Thus, knowledge about the relationship between oral structures and speech suggests that paediatric dentists could play an important role in identifying children at risk for early speech production difficulties. This is important as communication is vital for co-operation and effective dental treatment of younger children. Similarly, Predy and Meintzer (1982) stated that speech and language delays or difficulties could lead to several secondary complications. Hence family physicians must develop greater awareness and knowledge of the assessment and treatment of speech and language difficulties.

Van Eyndhoven et al. (2015) found that 73% of dentists reported that they were confident in diagnosing nose-speech difficulties. However, on average, they did not perform well with theoretical or practical speech therapy questions. Among all these sections, dentists had better knowledge (49%) about speech therapy and oral milestones (for instance, drooling and swallowing). Conversely, considerably lower scores were obtained for the sections seeking knowledge of phonemes and phonetics (23%). The authors suggested that paediatric dentists have an inadequate understanding of speech development and associated disorders. To conclude, most study respondents reported that speech therapy training should be considered as a priority in the education curriculum for pre-service paediatric dentists. An increased understanding of speech

delay and difficulties equips the professional not only for effective treatment planning but also in managing challenging behaviours present in some children (Van Eyndhoven et al., 2015).

Similarly, dentists' attitudes towards the provision of care for people with specific learning disorders was studied by Nagarajappa et al. (2012) in India. A 24-item questionnaire was deployed in the study. The questionnaire collected respondents' demographic details, general questions regarding previous experience in treating individuals with specific learning disorder the professionals' belief in treating and capabilities of individuals with specific learning disorders. A total of 247 dentists participated in the survey of the age group 23-69 years, with experience ranging from <1 year to 40 years.

Some of the key findings of the study (Nagarajappa et al., 2012) included were that the oral health care facilities obtained by individuals with disabilities were considerably lesser than their healthy peer groups and that the obstacles to access were mainly due to the inadequate knowledge and unsuitable behaviours and attitudes of dentists. However, an overall appreciative attitude was seen among dentists which had a notable association with the years of their professional practice (Nagarajappa et al., 2012). The greater the clinical experience the dentists had with the individuals with specific learning disorders, the better their assessment and management strategies in treating these populations. The majority of the study respondents (61%) exhibited an appreciative attitude towards treating these population; however, dentists reported that it is challenging to work with these individuals with a specific learning disorder. The authors suggested that to build a more positive disposition towards individuals with a specific learning disorder, dentists should be more consistent and compassionate and should have clinical experience in treating these population. This, in turn, eliminates any pessimistic attitudes towards these individuals. If a positive attitude can be developed, it will lead to the delivery of superior care in the service delivery towards these

population. The study concluded by reporting that there should be a significant improvement in the curriculum of dental programs. This is to provide dental students with the knowledge, expertise, and understanding of dental care among populations with special needs while practising, which would help to establish a positive mindset from the start of their professional practice. The findings of Nagarajappa et al. (2012) revealed an overall positive attitude among professionals towards individuals with specific learning disorders. However, these results were incongruent with the studies by Bedi et al. (2001) and Al-Abdulwahab and Al-Gain (2003). This was potentially due to the lack of clinical/work experience of the respondents in both studies.

The reasons for delays in the referral of children with speech and language disorders for rehabilitation services was investigated in an Iranian study (Vameghi et al., 2015). The study consisted of two phases. Phase one involved review of literature together with the families and experts' views on the factors that contributed to the delayed referral of speech and language disorders for rehabilitation services. Some factors identified included parental awareness and adequate counselling by physicians. The second phase included a case-control design in which two groups- case group (children referred over 3 years of age) and control group (children referred under 3 years of age) were compared using the influencing factors in referral between these groups, which is early referral versus late referral.

The crucial points emphasised by authors (Vameghi et al., 2015) was to initiate an on-time referral to increase the awareness of speech and language development and its significance among physicians and parents. A prime factor which differed between both the case group and the control group was the amount of counselling received regarding the significance and need of early identification, along with the screening and diagnostic tests by the physicians (Vameghi et al., 2015). These findings were consistent with those of an earlier Canadian study (Feldman et al.,

2005) who stated that inaccurate diagnoses of developmental delays were attributed to poor understanding of the severity of the disorder and it has a potential to develop scepticism about the efficacy of undertaking rehabilitation services.

Similarly, Bailey et al. (2004) reviewed factors such as failure and hesitation of North Carolina paediatricians in the referral process of young children with mild disabilities for early intervention, and the difficulty to use and comprehend assessments and standardized tests for behavioural and developmental screening. These factors were found to be the prime influential components for the on-time admission of children with a range of developmental disorders for early intervention. Once a child receives a diagnosis, then parental awareness becomes an influential critical factor for timely referral to an SLT. Some vital factors involved in seeking timely intervention includes; the parental understanding about speech and language disorders and its effect in child's life; concerns regarding the condition of the child being revealed in front of others (e.g., acquaintances); denial of the warning signs of speech and language delay and the potential effects on the overall health of the child; beliefs about the child's spontaneous recovery; and the other significant priorities and concerns in parents' lives. These findings were congruent with the findings of Leatherman et al. (2004), who revealed increased parental awareness plays a significant role in early identification and intervention. Similarly, Bailey et al. (2004) also noted that the existence of other priorities and concerns in the lives of parent are critical components that determine the timely referral of a child for early intervention services.

An early UK study by Lesser et al. (1986) investigated the knowledge and opinions of doctors, health visitors, and teachers about speech therapy. Alongside, the awareness of students who were training to enter the respective fields (medicine, nursing and education) was also investigated. A total of 264 respondents participated in the study. The researchers developed an

18-item questionnaire seeking information about participants' (1) personal experiences of communication disorders and SLTs, (2) speech-language information included in their training, (3) perceived needs for SLT support, (4) information about SLTs' scope of practice and (5) idea regarding SLTs' education.

The major finding was that students appeared to have moderate awareness about SLT profession (Lesser et al., 1986). However, there were differences in the understanding of SLT profession among the professionals. The health visitors appeared to have better knowledge about SLTs' scope of practice, whereas teachers had a low level of awareness about SLT profession, including work settings. It appeared like the trained teachers may not know the possible support from the speech therapy programme that might be accessible to them or, if they know, they do not believe that these areas come under the scope of practice of an SLT profession. As the mainstream teachers are increasingly involved with children who experience speech, language, and communication disorders, their (teachers) limited knowledge can negatively affect the pupil. Therefore, it is essential to include information about the SLT profession in teacher's curricula if they are expected to deal with a sizable number of students who need an SLT (Lesser et al., 1986).

Ebert and Prelock (1994) researched to understand teachers' perceptions related to students with communication disorders in the USA. The research involved 16 elementary school teachers from grades 2 through 5. Only half of the teachers were given training in a language-in-the-classroom (LIC) programme. The training was a 14-hour programme carried out in 7 sessions which revealed different facets of speech and language development. Also, teachers were engaged with an SLT. Teachers were asked to rate the student performances from the highest to the lowest. On the data analysis, teachers who received the training and who participated in collaborative activities with an SLT were found to be more competent in identifying children with

communication disorders than the teachers who did not attend the LIC programme. The study draws attention towards the importance of engaging trainee teachers in collaborative activities with SLTs which will better equip them in identifying children with various communication disorders. Likewise, better understanding relating to communication disorders would prepare teachers to realise the strengths and weaknesses of a child with communication disorders. This, in turn, will help to modify their perceptions about the child and also in adapting appropriate teaching strategies.

On the other hand, children with communication disorders were perceived to be unsuccessful in general by the teachers who did not attend the LIC training programme (Ebert & Prelock, 1994). This finding was consistent with Ripich (1989), who stated that differences exist between a child's capability and their teacher's expectations. Alongside this, the cognitive and communicative potentials of a child may be trivialized if the child has a speech and language disorder. To conclude, educating and training teachers on diverse aspects of speech and language development and various communication disorders will help in improving the awareness levels. This will in turn, develop a positive outlook towards the students who are identified with various communication disorders.

Another study that investigated the teachers' perceptions of students with speech sound disorders was done by Overby et al. (2007) in the USA. The participants of the study were 48 second-grade teachers. The participants were selected as children tend to master speech sounds by around seven to eight years (Smit et al., 1990). The study involved listening to a second grader's two groups of sentences which differed in intelligibility and pitch. They then rated the speaker's academic, social and behavioural competence using an adapted version of the Teacher Rating Scale of the Self-Perception Profile for Children (Harter, 1982) and answered, 3 open-ended

questions. The stimuli constituted 33 sentences taken from the 'Hearing in Noise Test for Children' (HINT–C) (Nilsson et al., 1996). The open-ended questions included: (1) what was your overall impression of this child? (2) what would you project regarding his experience in school? And, (3) any comments you have about this task or experiment?

The study of Overby et al. (2007) revealed these findings. Firstly, the negative attitude of teachers towards children with speech sound disorders was consistent with the findings of Ruscello et al. (1983). Secondly, the teachers' perceptions regarding the academic, social, and behavioural competence were highly determined by the speech intelligibility of the students. Although the important predictors for teacher referrals for special education are considered to be behavioural and academic proficiency (Abidin & Robinson, 2002), a teacher's referral decisions regarding academic, social and/or behavioural special education services may be influenced by the perceived speech intelligibility of the student. Teachers' poor awareness of the high risk of literacy problems in children with speech sound disorders emphasises the need to educate them.

Educating and training the teachers regarding communication disorders has been demonstrated to be valuable in modifying their perception (Ebert & Prelock, 1994). It also aids teachers in the constant observation of literacy skills in children with speech sound disorders. Some teachers (31%) assumed that speech sound disorders potentially cause learning, social and/or behavioural disorders in children; hence it is important to inform them that there is no known clear causal correlation between speech sound disorders and school-based issues. While children with speech sound disorders carry a chance of academic difficulties; however, several children with speech sound disorders do not encounter any problems at school. All these findings shed light on the significance of enhanced communication between SLTs and teachers regarding the challenges and needs of children with speech sound disorders. SLTs must be mindful that teachers'

recommendations for special education programs are focused on their views of the learning, social, and behavioural competencies of students (Abidin & Robinson, 2002). Moreover, speech therapy referrals are based upon teachers' perceptions and need not be based on the performance of the child.

Karnowski (1976) investigated the awareness of Australian preservice teachers about speech therapy services. The study was carried out among 40 final year students who were studying towards a Diploma of Education, specifically trained to teach at the infant or primary school level. The study employed a self-administered questionnaire. The teachers were asked to choose from a list that consisted of 19 difficulties or problems exhibited by children in classrooms and then to choose from a second list, the professionals who are concerned with each of these difficulties. In the list along with SLTs, the other professionals included were, but not limited to, remedial teacher, elocution teacher, psychologist, neurologist etc. The questionnaire's subject was mentioned to be health services, in general, to reduce the bias responding in favour of speech therapy.

Results indicated 90% of the participants responded stuttering to be the condition most likely to benefit from speech therapy services (Karnowski, 1976). Furthermore, the results showed that student teachers are unaware of the entire spectrum of disorders for which an SLT can provide support (Karnowski, 1976). The awareness is better in terms of subtle communication disorders, however, as the complexity of the communication disorders increases or when the communication disorders exist secondary to conditions such as hearing loss, cognitive impairment etc. then the awareness appears to be limited. The author concluded by stating that SLTs should share the information on speech and language development and related disorders with professionals such as teachers and other childcare specialists to elevate the understanding speech and language development and the related delays.

2.4 Awareness about SLCN in Justice System

A recent study investigated police officers' awareness regarding the speech, language and communication needs (SLCN) of young offenders in Scotland. The study was completed by MacRae and Clark (2020). An online questionnaire was used for data collection. A total of 158 survey responses were obtained. Results indicate that most participants were unaware or unsure about SLCN. Therefore, the authors suggested that SLTs should take necessary actions to improve the awareness of SLCN within the judicial system (MacRae & Clark, 2020). Early identification of SLCN is essential if a young person is to gain the requisite resources to contribute and interact actively in the justice system.

Furthermore, enhancing awareness is important because challenges in comprehension and expression of speech can pretence as behavioural phenomena such as impoliteness, inadequate social skills, or lack of interest which may impact judicial outcomes. If police officers are unaware or are unable to identify and support speech and language disorders, there is a high risk of unmet requirements having a serious effect on the delivery of justice for young people. Therefore, it is an SLT's responsibility to raise awareness about SLCN to lessen the potential misunderstanding during communication between the young offenders and the judicial system and thus improving the interaction (MacRae & Clark, 2020).

The next section considers the concept of 'health literacy' which is significant and relevant in improving the public awareness.

2.5 Health Literacy

To improve public awareness, an important area that needs to be considered is health literacy. Improving health-related knowledge of an individual will, in turn, improve an individual's health-related awareness. Therefore, enhancing health literacy can bring a positive change in improving public awareness (Hester & Stevens-Ratchford, 2009).

Health literacy can be defined as the degree to which individuals can obtain, process and understand necessary health information to make appropriate health decisions (Ratzan & Parker, 2000). Health literacy also relates to an individual's ability to access and interact with health contexts to support their well-being (Rudd et al., 2003). Health literacy can be viewed as a link between literacy skills and the abilities of individuals and health context (Nielsen-Bohlman et al., 2004). Literacy skills empower individuals to comprehend and communicate health-related information and concerns. For example, an individual who can access relevant health information about their health and then use this information to seek health support is considered more 'health literate' than an individual who might be able to access health information but struggle to interpret this with relevance to their own needs or those of their dependents.

The characteristics and quality of health-related information is another important influencing factor in health literacy. Certain intrapersonal factors, such as educational achievement, cultural background and beliefs, and language skills are also crucial factors in the context of health literacy. The three major attributes to health literacy comprise the cultural, social and individual factors (Nielsen-Bohlman et al., 2004). The term culture includes shared ideas, meanings and values which are being acquired by the individuals as society members. Culture is socially learned, continuously evolving and often influences one unconsciously (Institute of Medicine, 2002).

One's attitudes and beliefs can be strongly influenced by cultural, social and familial components. This, in turn, influences the way through which people interact with the health system and help determine the efficacy of health literacy skills in a variety of contexts. For instance, in Native American cultures, dreams are considered as crucial factors to deal with health and illness (Nielsen-Bohlman et al., 2004). Hence, it is important to exhibit cultural competence as a speech and language professional by being sensitive to appreciate such values and beliefs of the clients (Bunning, 2004). Social factors also have a tremendous effect on health literacy. Few among those factors include socioeconomic status, gender, education etc. Kirsch et al. (1993) state that individuals with a lower income are also likely to have limited proficiency in health literacy. According to Balsa et al. (2001), poverty is also entwined with several sociodemographic variables, and this, in turn, is related to limited literacy.

Furthermore, an individual's level of health literacy is mediated by several factors. This includes cognitive abilities, emotional states, social skills and physical conditions such as visual or auditory sensitivity and acuity. The health context includes the media, the marketplace, and government departments, and those persons and materials with which an individual communicates in terms of health, all of which must be able to accurately provide fundamental health information (Rudd, 2003). The reason behind limited health literacy skills and the panacea relies on the social and cultural contexts, the health and education systems as well as how these variables interact (Nielsen-Bohlman et al., 2004)

Thus, levels of health literacy are potentially linked with the general public's awareness of professional fields of practice, such as SLT. Health literacy, therefore, presents an opportunity. It can be considered as a crucial way through which public awareness about the field of SLT and communication disorders can be improved.

2.6 Health Literacy in Relation to SLT

There are few studies that have specifically investigated health literacy relevant to SLT. One of these studies identified health literacy in general and the potential role of SLTs in supporting it (Hester et al., 2009). The authors suggested that there is a well-defined role for an SLT in improving the health literacy skills of the public. Individuals can be empowered in this process by the communication specialists through teaching them the skills that facilitate health communication. As language and communication are crucial factors for adequate health literacy, clients use these communicative strategies for accessing health services, describing and discussing symptoms, answering questions, comprehending recommendations as advised and asking relevant questions.

Hester et al. (2009) presented three levels of health literacy skills. These were (level 1) functional health literacy; (level 2) communicative or interactive health literacy; and (level 3) critical health literacy. Level 1 involves health information communication and the use of the healthcare system. An example of level 1 is when an individual is experiencing aphasia post-stroke, and their family is informed regarding the symptoms of aphasia and the treatment options available. Level 2 health literacy involves empowering individuals to take responsibility for their health care and well-being. For a client with aphasia, this could involve accessing the services through making appointments, interacting with the service provider and understanding findings of assessment processes. Level 3 involves the utilisation of cognitive skills aimed to support the social, political and individual actions noted in level 2. So, in the aphasia scenario, an example of demonstrating the critical health literacy skills might involve advocating for policy changes to better support individuals with aphasia. In conclusion, this continuum needs the application of

cognitive, social, and communication elements of the WHO's definition of health literacy (Hester et al., 2009).

Von Wühlisch et al. (2011) also reported that SLTs have a vital role beyond the routine clinical consultations and interventions by assisting in improving health literacy skills within cross-cultural areas. Additionally, the author stated the need for training professionals (SLTs) so that the quality of service delivery will also be improved simultaneously.

Similarly, McCrary et al. (2011) examined health literacy in multicultural populations. Their findings revealed low levels of health literacy among minority clients without communication disorders. Study participants with speech, language and hearing difficulties were noted as being at a higher risk for misinterpreting communication such as speech and hearing materials concerning the diagnosis, intervention and recommendations. McCrary et al. (2011) recommended development and distribution of reliable and accessible health-safety information about medical conditions such as hearing loss, aphasia, dysphagia, traumatic brain injury, tracheostomy and laryngectomy. Written materials and instructions can be better comprehensible if portrayed using pictures and illustrations, as suggested by clinicians and researchers (Blackstone et al., 2011; Hoffman & McKenna, 2006; Rao, 2007).

Speech and language service delivery could be modified to improve the communication, health literacy, availing health services and informed consultation in addition to the use of plain language, reducing the rate of speech and lessening the amount of information provided. The use of a few strategies, such as encouraging clients to clarify doubts and summarising client understanding can improve the diagnostic and treatment instructions provided by SLTs (Rao, 2007). Health literacy could be incorporated into the speech-therapy curriculum. There are certain aspects that should be taken care of minority clients and communities. Some of these include

determining the individual's health literacy levels, funding and extending efforts to offer community-level adult education, providing linguistic education and linguistically relevant information resources, and providing interpreters services during assessments and treatments when required.

In summary, these studies suggested that health literacy is a pivotal component through which public health awareness can be improved (Hester & Stevens-Ratchford, 2009; Hester et al., 2009; Von Wühlisch et al., 2011 & McCrary et al., 2011). Enhanced health literacy skills will, in turn, improve an individual's health-related quality of life. Public awareness of the SLT profession and services available is likely correlated with aspects of the health literacy of the general population. Most studies have stated the need and importance of advancing public awareness and have concluded that enhancing personal knowledge about SLTs are of utmost importance for the individual and society.

2.7 Attitudes towards Speech and Language Disorders

Fewer studies have investigated the attitudes or perspectives of individuals in society towards individuals with SLCN. One such example is a Malaysian study by Baskaran (2000) that looked at the attitudes among citizens of Asian countries towards individuals with SLCN. The methodology consisted of interviews and questionnaires carried out among parents, caregivers and several other societal groups who were related to the well-being of individuals with SLCN. The findings suggested that participants indicated a reluctance to seek professional help as they consider that speech, language, and communication disorders were the result of fate and are determined by God. Therefore, in some countries, cultural and religious beliefs play a significant role in determining the actions of parents and caregivers in seeking intervention services.

Another study looked at community self-help and help-seeking support aspects of communication disabilities in Fiji (Hopf et al., 2017). The study involved presenting members of the public with a questionnaire designed to determine how they might support a child/adult having communication difficulties. Responses to 144 completed questionnaires were analysed. Respondents indicated they would support individuals with SLCN either via their behaviours (e.g., their communication styles), teaching new skills, praying for the affected individual, making environmental modifications, using traditional medicines, Western medicines and/or traditional belief and practices. Brison (2007) stated that these reactions are firmly centred in Fijian tradition of respect for the universal love for their community. The other modalities of support noted were through the advice and support from their community, educated practitioners, professionals abroad, spiritual leaders, traditional belief practitioners, traditional medicine practitioners, western health care practitioners or other alternate providers (home, orphanages, nursing home etc.) (Hopf et al., 2017).

A study conducted in Ghana investigated the self-help and help-seeking attitudes towards individuals with communication disability (Wylie et al., 2017). The study used a qualitative descriptive survey that received one hundred and thirty-six responses. Consistent with the previous Fijian study, the results showed that the community members are likely to engage in several strategies to offer support for the individuals having communication difficulties. These included uses of communication repair strategies, self-educating towards changing the negative attitude towards communication disabilities, seeking spiritual ways, Western health care and through providing resources to individuals with various SLCN.

Summary of Literature Review

In summary, this review has identified that knowledge and awareness of the members of the general public, parents, allied health and non-health professionals concerning the field of SLT are limited than desirable since past four decades. Hence, there exists a crucial need for designing awareness programs to elevate the understanding of SLT/SLTs. When designing awareness programs, consideration should be given to increase knowledge about the profession of SLT and the characteristics and needs of various populations with which an SLT works. In most studies, participants have reported that SLTs work mainly in treating conditions such as stuttering and speech sound disorders. However, these disorders are few among many other disorders for which SLTs provide intervention. A crucial factor that needs to be considered for improving awareness in the general public is health literacy. Improving health-related knowledge of an individual will in turn, improve an individual's health-related awareness. Therefore, enhancing health literacy can bring a positive change in improving public awareness. Besides, these reviews also reveal that populations within countries and cultures have their different perspectives towards the terminology 'disability'. Some consider it as positive while for others, it is negative. Some express sympathy towards individuals with various SLCN, while others try to be more empathetic and promotive. There are differences in how the affected individuals and their families have been supported. Further information to better understand prevailing attitudes and beliefs about 'disability' will also help to determine influences on public awareness and areas to potentially target for public awareness initiatives. Taken together, increasing public awareness and supporting positive and optimistic attitudes towards individuals with communication disability will serve to enhance the quality of lives of individuals with a communication disability.

2.8 Need for the Current Research Study

The findings from the 'New Zealand Disability survey' conducted in 2013 revealed the necessity for being aware of the field of SLT and why it is so significant in the Aotearoa New Zealand context (Disability | Stats NZ, 2013). The survey results indicated that 11% of the total populations were found to be limited by sensory impairments (hearing and visual loss). Among this 9% of the total populations were found to have a hearing impairment. Hearing loss was more likely to be experienced by males (12%) than when compared with that of females (9%), and it had a strong correlation with age and was noticed to occur equally likely in both boys and girls. Four other kinds of impairments found in the survey include memory, speaking, learning and developmental delays. A total of 358,000 adults and children (8% of the population) were limited by any of these impairments, with males more likely to be affected than females. Among children, the most identified impairment was a learning disability. That is 6% of the children, and 52% of total children with a disability had learning issues. Difficulty in receptive and expressive language skills due to a medical issue or a chronic condition affected 3% of the total population. Also, a learning difficulty associated with medical issues or a long-term condition affected up to 5% of the total population. Almost 5% of the adults had memory issues and observed it to be directly proportional to their age. Developmental delays were also found; however, rates were low.

This survey was conducted seven years ago, and the percentages mentioned above concerning each impairment would have probably increased. Hence the role of an SLT comes into place and becomes inevitable for assessment, diagnosis and the intervention sessions augmenting the individuals with special needs and thus improving their quality of life. Therefore, public awareness and understanding regarding the role of SLTs and their scope of practice becomes essential.

2.9 Significance of the Current Research Study

A novel aspect considered in the current research study includes the investigation of the awareness of SLT and communication disorders among the general public in Aotearoa New Zealand. Further, the communication support needs, knowledge and experiences and the attitude of the Aotearoa New Zealand public towards individuals with communication impairments have also been studied.

2.10 Research Rationale

The study aimed to determine the Aotearoa New Zealand general public's level of awareness of the SLT profession and attitudes towards people with SLCN. Several international studies have reported low levels of public awareness of the SLT profession. However, no Aotearoa New Zealand-based studies have investigated this topic, and a study in the area will help to determine if the Aotearoa New Zealand context is consistent with international data. The major objective is to provide a basis for future public awareness initiatives to support the SLT profession and individuals who experience SLCN. The proposed study will also inform future research on public awareness of SLT and allied health services to ensure these professions are appropriately understood, recognised and valued. The following research questions was investigated.

2.11 Research Questions

The three research questions that are being addressed through this study includes the following:

1. What are the levels of public awareness of the SLT profession and populations with communication disorders in Aotearoa New Zealand?
2. What knowledge and experiences do the Aotearoa New Zealand public have about individuals with communication impairments?
3. What attitudes do members of the Aotearoa New Zealand public have towards individuals with communication impairments?

In order to assess the above research questions, data were collected using an online survey. In the following section, the methodology and research design will be explained in detail.

Methods

This chapter describes the research methods employed in the current study. The study was based on an online survey. The design and development of the survey instrument, recruitment strategies and intended participants are described in detail below.

3.1. Ethical Considerations

Ethical approval for conducting the research was obtained from the Human Ethics Committee at the University of Canterbury on June 15th, 2020 (Ref: HEC 2020/40). See Appendix A for a copy of the ethics approval letter.

3.2. Research Design

3.2.1 Survey Design

An online survey was developed for use in the current study. The survey was based on an original questionnaire developed by Breadner et al. (1987), which aimed to investigate the public's awareness regarding SLT in the United Kingdom.

The original questionnaire had four sections, namely A, B, C, and D. In part A, questions focused on how well the public understood the term 'speech-language therapist' and in part B, participants were asked to rate the necessity of seeking professional help for a range of example clinical conditions. Similarly, part C consisted of questions that sought the participants' understanding of the various populations that SLTs work with. Finally, part D concluded by seeking participants' demographic details.

This survey instrument underwent several key changes for use in the current study. While making these adaptations, revisions made by Mahmoud et al. (2014), Uysal et al. (2019) and Chu et al. (2019) were also considered. For instance, the adaptation of Breadner et al. (1987) instrument included changes made to reflect and encompass the Aotearoa New Zealand context/culture (e.g.,

demographic questions and terminology). A draft of the survey was prepared for pilot testing. The survey included three sections (A, B and C) designed to help achieve the aims of the current study. The sections and example questions are as follows.

A. Section A collected demographic details of the respondents. For instance, gender, age, area of work or study, locality of residence etc.
B. Section B investigated information on the public's views and perspectives regarding the field of SLT, knowledge about SLTs' education and information about SLTs' scope of practice.
C. Section C presented descriptions of the number of various 'case examples' of different paediatric and adult speech, language and communication disorders. Respondents were asked to rate the need to be seen by an SLT in the scenarios provided. The ratings were recorded using a five-point Likert scale (i.e., 1. strongly agree, 2. agree, 3. undecided, 4. Disagree, 5. Strongly disagree). The section looked at the respondents' personal experiences, perceived needs for SLT support, and their attitude towards communication disorders.

3.2.2 Face Validity

The survey was circulated among 7 experienced and currently practising SLTs in Aotearoa New Zealand. Key points of feedback from these SLTs included -

- Including some Te Reo Māori terminology in the survey as the survey will include Māori participants. This led to the use of words such as 'Tamariki' for children and 'whānau' for the family throughout the survey.
- The sections in the survey were rearranged from that of the initial study by Breadner et al., 1987. The order was rearranged in a way in which section C became section A with the

demographic details, the original section A on respondent's knowledge of the SLT profession became section B, and the original section B with case examples became section C.

- Additional questions were added into section C. That is, along with the clinical case examples stated, questions aimed to understand the attitudes and communication support needs of the general public towards speech and language disorders were also included. Some examples of these questions included the following:
    a. *'What support do you expect for an individual with communication impairment (e.g., it is very hard to understand what they say) from wider society?'*
    b. *'Would you like to work for organisations/institutions that provide services to individuals with communication disorders?'*
    c. *'How much do you agree with the statement below?'*

       "Individuals with communication impairments are well-considered and supported in my ethnic group".
- A further suggestion was related to the subject names used to describe the clinical conditions in section C. All the names were reviewed and restated, reflecting Aotearoa New Zealand-specific culture. For example, names such as 'Aroha' and 'Ari' were included while describing clinical cases.
- Other comments were related to grammatical structures.

3.2.3 Pilot Study

Once the feedback was integrated into the survey instrument, a pilot study was conducted with 12 participants. These were laypeople without any medical or SLT background. The rationale behind conducting a pilot study was to understand whether any questions or instructions provided

in the survey was difficult to understand, to gauge the approximate time required to complete the survey, and to gauge the level of detail provided in response to the open-ended questions. The following suggestions were obtained from the participants after the survey.

- In section C, there were open-ended questions which looked at analysing the attitudes and support needs of the general public. For example, *'Imagine having an adult member in your family with a communication impairment, what support would you expect from their workplace or wider society?'* More than half of the participants responded that it was time-consuming, and they did not understand what was expected in response to this question. Therefore, similar open-ended questions in the section were replaced with questions that required multiple choice answers. Also, in the end, an option for descriptive text entry was provided.
- In section C, fewer participants responded they lack knowledge regarding the 'communication support systems' that are available in general for the individuals with SLCN. Hence answering these questions were found to be difficult. The participants suggested that it would be better if options were provided. Therefore, multiple-choice questions were provided.
- Some technical errors were reported in the functionality of the survey. For example, a separate survey was set up to record email addresses of participants who wanted to enter the incentive draw and who wished to receive a summary of the study's results. The use of a separate survey enabled this identifying information to be recorded and stored separately from participant survey responses, thereby maintaining full anonymity. As the participant completed the primary survey, they were automatically redirected to an anonymized raffle survey. These technical errors were rectified with the help of the Qualtrics support system.

3.2.4 Final Survey

The final survey was designed after integrating feedback from both the SLTs and pilot study participants (see Appendix B). The survey was developed using the 'Qualtrics XM survey platform'. The final survey consisted of 3 sections, A, B, and C.

Section A consisted of participants' demographic information. This section comprised 10 questions along with a sub-question for the eighth question. The questions included the participant's age, gender, ethnicity, educational qualification, family income and the locality of residence. Further, this section sought information on whether the participants had any children. If yes, how old their children were and if any of the children had previously received speech-language therapy services.

Section B sought information about the public's views/perspectives regarding the field of SLT, knowledge about an SLT's education, and information about SLTs' scope of practice (work settings, population SLTs deal with, the intervention provided etc.). This section contained 12 questions with the first and ninth questions containing two sub-questions each.

Section C was presented with descriptions of some 'case examples' of different paediatric and adult speech, language and communication disorders. Respondents were asked to rate the need to be assessed by a speech-language therapist in each of the clinical case scenarios presented. For example," Amelia, age 5, cannot say the 's' sound. She uses the 'th' sound instead. For example, she says 'thpoon' for 'spoon'. Should Amelia be seen by a speech-language therapist"? The ratings were recorded using a five-point Likert scale (i.e., 1. strongly agree, 2. agree, 3. undecided, 4. Disagree, 5. Strongly disagree). Moreover, this section looked at the individual's personal experiences, perceived needs for SLT support, and their attitude towards communication disorders. The section had 15 questions in total. Based on the suggestions from the participants of the pilot

study, the open-ended questions to determine the attitude or perspectives related to communication disorders were converted into multiple choice questions and a single option for descriptive text entry.

3.3. Participants

3.3.1 Inclusion Criteria

It was intended that all study participants should be individuals aged 18 years or above and who currently reside in Aotearoa New Zealand.

3.3.2 Exclusion Criteria

As the survey was intending to assess public awareness about the SLT profession/professionals, therefore the individuals who were studying towards an SLT programme, or were practising or retired SLTs, were excluded from the study. This exclusion criterion was developed in order to reduce the potential for data skewness. This involved including screening questions at the beginning of the online survey. For example, if a participant responded '*yes*' to the question, 'Have you ever worked as a speech-language therapist?' then participants were thanked for their time and notified of the exclusion criteria. If a participant responded '*no*', they were taken to section A of the main survey.

3.4. Recruitment

The potential participants for the study were approached and recruited via multiple online channels and word of mouth. These included Facebook, LinkedIn groups of allied health professionals, teachers, and various community groups and through the publicly available contact information for several organisations. For instance, the researcher and the supervisors posted the study advertisement on their Facebook pages with the study advertisement (see Appendix D). The

other universities across the country were also approached via mail and asked to post the survey link on their social media pages.

A snowball recruitment approach was undertaken for the survey. The researcher asked potential participants to share the study advertisement (see Appendix D) within their networks and among their acquaintances. Snowball sampling is also called a 'chain method', and it has several advantages. It is cost-effective and efficient to access participants that may have been hard to find otherwise (Naderifar et al., 2017). For instance, the research asked potential participants to share the study advertisement within their networks and among their acquaintances.

3.4.1 Survey Distribution

The anonymous survey link was distributed to the participants. The participants in the study included members of the general public in Aotearoa New Zealand. The target participants in the study included members of the general public in Aotearoa New Zealand. A minimum of 111 completed surveys was planned. This is based on a priori analysis conducted using G*Power to obtain an estimated sample size of 111. A correlation point biserial model statistical test and a one-tail *t*-test were applied. The input parameters included an effect size of 0.3, an alpha level of 0.05 and a statistical power of 0.95.

3.5 Data Analysis

Considering the objective of the current study, descriptive statistics were used during data analysis. Responses to open-ended questions were thematically analysed to identify common themes reported by participants. A supplementary analysis was also carried out using Chi-Square test of Independence to examine the differences between certain demographic factors (gender and participants with and without children) and the level of participants' awareness about SLT/SLTs.

Thematic Analysis

Thematic analysis (TA) is a method through which *patterns* or *themes* in qualitative data have been identified, analysed and reported. The objective of thematic analysis is to identify themes. In accordance with the research question, a *theme* identifies information about the data and reflects some level of patterned response or interpretation within the data set (Braun & Clark, 2006).

According to Braun & Clark (2006), there are six steps involved in thematic analysis. The steps are briefly explained as follows.

- *Familiarisation with the data:* This includes transcribing data if required, reading and re-reading the transcripts, listening to audio recordings and taking notes on the initial analytic observations or ideas.
- *Coding:* In the process of determining patterns in the data, coding is the initial step as it collects related data segments together. It is a structured method of identifying and naming the data's specific characteristics in regard to the research questions.
- *Searching for themes:* Selection of codes into plausible themes, collection of all data related to each possible theme.
- *Reviewing themes:* The researcher pauses the theme generation process to evaluate the work of the themes concerning the coded excerpts and the whole data set. Thereby confirming whether the themes exhibit a good 'match' with the coded data and the whole data set, and each theme has a simple, different 'essence' or core organising principle. Reviewing can lead to no or little changes, or to discarding and restarting the previous process of the candidate themes.

- *Defining and naming themes:* This involves writing a brief summary of the themes and selecting a theme name to ensure the logical clarity of each theme, thereby facilitating the final writing with a roadmap.
- *Report writing:* This process involves the final review opportunity. The selection of clear, convincing examples of excerpts, final evaluation of selected extracts relating to the research question and literature. Finally, formulating the analysis report.

Results

A total of 896 survey responses were received. After 96 partially completed surveys were removed from the dataset, 800 fully completed surveys were considered for analysis.

Note: As some of the questions were given with an option to select multiple answers as choices, the total response figure exceeded the total number of participants.

4.1 Demographics

The demographic section of the survey sought information related to the gender, age, ethnicity, educational level, area of work/study, socio-economic level, place of living in Aotearoa New Zealand and information regarding whether the participants have children or not. The participants who completed the survey were aged from 18 to 72 (*Mean age* = 28.07 years, *SD* = 11.93).

Fifty nine percent (*n* = 470) of survey participants identified as female and 40% (*n* = 320) were male. Less than 1% of the participants identified as 'other' gender or preferred not to disclose the information. Participants were located throughout Aotearoa New Zealand with responses obtained from all regions of both the North and South Islands. The majority of the data was obtained from the South Island (78%; *n* = 621) with (22%; *n* = 179) of participants from the North Island.

A majority of the participants identified as NZ European (73%) followed by Māori (9%) and Asian (9%), then Pacific people (2%), Middle Eastern, Latin American/African (1% in total), and other ethnic groups (6%).

Approximately 42% of the participants indicated NCEA Level 3 Bursary as their highest level of educational achievement, followed by a bachelor's degree (29%), master's degree (11%), certificate/diploma (10%) and other (8%).

Participants' area of work or study were reported as follows: research and science (19%), education (16%), community and social services (9%), health (8%) and other (72%). The 'other'(in the Table 1 below) includes retail and sales (17%), building, manufacturing and engineering (16%), arts and culture (14%), tourism (7%), corporate (5%), hospitality (5%), criminal justice (4%), agriculture (3%), transport and logistics (1%), and other (1%).

Almost half of the participants (48%; n = 384) noted an income of $70,000 or above. About (19%; n = 154) of participants' income fell in the range of $48,001 to $70,000 and (20%; n = 157) of participants' income was noted to be from $14,001 to $48,000. The remaining (13%; n = 105) had an income of $14,000 or less (see the summary of participants demographics in Table 1).

Table 1. *Summary of the participants' demographic details.*

Variable	Category	*n*	%
Gender	Female	470	59
	Male	320	40
	Other	4	1
	Prefer not to say	6	1
Education	NCEA Level 3 Bursary	334	42
	Certificate/Diploma	76	10
	Bachelor's Degree	233	29
	Master's Degree	90	11
	Other	67	8
Area of work/study	Research and Science	149	19
	Education	129	16
	Community and social services	74	9
	Health	61	8
	Other	575	72
Place of living	North Island	179	22
	South Island	621	78
Annual income	$14,000 or less	105	13
	$14,001 to $48,000	157	20
	$48,001 to $70,000	154	19
	$70,000 or above	384	48

Note: For the area of work/study, categories relating to the field of SLT are noted. All others are included in 'Other'.

Only 19% (n = 154) of participants reported having children. Of those, 23% (n = 36) reported that their child/children received speech therapy services. Notably, the parents of those children who had undergone speech therapy comprised 4.5% of the data set. The participants with children reported a variety of age ranges for their children (See Table 2 for a breakdown of these age ranges).

Table 2. *Age range of participants' children.*

Age range	***n***	**%**
Under 2 years of age	23	11
2 – 5 years	31	14
6 – 9 years	43	20
10 – 13 years	36	17
14 – 17 years	25	12
18+ years	59	27

Note: The percentage is based only on those participants (n=154) who reported having children.

4.2 Awareness about Speech-Language Therapy and Therapists

Participants were asked 13 questions about speech-language therapy and the scope of practice for speech-language therapists. Most participants reported having never read anything about SLT (67%; n = 538) or never heard anything about SLT (72%; n = 575). Those who reported reading about SLT (33%; n = 262) were asked to indicate their sources of information. They identified the following sources: websites (60%), social media (38%), books/magazines (27%), brochures/pamphlets (27%), and other (27%). Furthermore, the participants who reported hearing about SLT (28%; n = 225) indicated that they had heard about it from other people (66%), online

video/audio (31%), presentation/ lecture (30%), television (18%), and other (14%). Most participants (63%; *n* = 500) reported never meeting an SLT, and neither their family, friends, nor colleagues worked as an SLT (84%; *n* = 675).

The participants believed that the work settings of SLTs were health and educational settings. Specifically, most participants considered that SLTs work in private clinics (63%), hospitals (51%), or supported living and rehabilitation units (50%), primary schools (49%), preschools/kindergartens (44%), secondary schools (31%), tertiary education (28%), and other settings (3%) were also noted by participants. Interestingly, some participants (27%) reported that they do not know where an SLT works. When asked about the age range of clients with which SLTs work, most participants reported these to be preschool-age children (80%), primary school children (94%), teenagers (86%), adults (80%) or geriatrics (65%). Notably, only 33% of the participants responded that SLTs work with infants. However, in fact, SLTs do work with a considerable number of infants, especially for conditions such as paediatric feeding and swallowing disorders.

When asked regarding the need for a referral from a general practitioner (GP) to have an SLT consultation, participants were divided between *yes* (33%; *n* = 261), *no* (37%; *n* = 298), and *unsure* (30%; *n* = 241). Regarding the service or support provided by an SLT, most participants (93%) reported it to be *behaviour therapeutic*, followed by *counselling support* (56%). A few participants indicated that SLTs could provide *pharmacological* (8%) and *surgical* (7%) interventions too. A majority of participants (65%; *n* = 517) indicated that the duration of speech and language intervention could be variable depending on the condition and the person being treated. Some participants however, believed it to be either long-term (16%; *n* = 128) or short-term

(14%; *n* = 108). Few others believed that prognosis could be obtained immediately (3%; *n* = 24) and others were unsure (3%; *n* = 23).

Lastly, the participants were asked questions about the training required to become an SLT. Most participants (60%; *n* = 479) indicated it required 3- to 4-years training to become a qualified practitioner. Interestingly, only (24%; *n* = 193) of the participants correctly reported that at least 4-5 years training is required. The participants were also asked if a *speech-language therapists* can be called *doctors* and *speech-language pathologists* in two follow-up items. Most participants either responded *false* (42%; *n* = 336) or *unsure* (38%; *n* = 300) and some participants (21%; *n* = 164) stated it as *true* on the item relating to an SLT being called a *doctor*. Interestingly, a different trend was observed when participants were asked if *speech-language therapist* can be called as *speech- language pathologist*, (50%; *n* = 396) of participants correctly responded *true*, while (9%; *n* = 71) responded *false and* (42%; *n* = 333) were *unsure*.

In summary, most participants indicated that they had never either heard or read anything about SLTs and had never met an SLT. This finding correlated with responses that suggest low or moderate levels of understanding about the roles and factors involved in SLT. For example, most participants indicated that SLTs work in a private setting. This is not entirely true as a significant proportion of SLTs work in hospital settings as well. Other trends were also observed in participants' responses. For instance, most participants believed SLTs work in educational settings, hence assumed them to work with primary school children which is true. Similar correct responses were observed in items related to the practice and training of an SLT.

4.3 Awareness and Attitudes towards Speech, Language and Communication Disorders

In this section, participants were asked to respond to six 'clinical cases' of speech, language, and communication disorders among paediatrics and adults (see section C in Appendix B). This section also looked at the participants' personal experiences, perceived needs for SLT support, and their attitude towards individuals with SLCN (see section C in Appendix B).

4.4 Awareness of Speech, Language, and Communication Disorders

The clinical cases included brief descriptions of disorders related to speech sounds, voice, language, dysphagia, learning, and stroke. In all the listed clinical cases, an SLT consultation was ideal. For instance, the first clinical case was about a child aged 5 who cannot produce the /s/ sound accurately and uses the /th/ sound instead. Other scenarios included an older adult aged 68 who had a lump removal from their throat and experiences difficulty swallowing and drools while eating. In all of the six scenarios, the participants were asked to rate the need for an SLT consultation on a 5-point Likert scale from strongly agree (1) to strongly disagree (5).

Interestingly, a trend was observed with participant responses being more precise in some situations compared to others. For example, participants were apparent in need for an SLT consultation in specific learning disorders and stroke and were less clear about voice and language disorders. For instance, specific learning disorder was found to be the clinical condition wherein most participants (48%) indicated the crucial need for an SLT consultation while some (16%) disagreed and some others were undecided (20%). Similar trends can be observed in regard to the agreement (48%) of an SLT consultation in the clinical case of a stroke patient and speech sound disorders (45%) (See Table 3 below). For the condition in which there was a mixed finding was

regarding dysphagia. About (28%) of the participants agreed that an SLT consultation is required. While an identical proportion of the participants either disagreed (28%) or were undecided (23%).

Table 3. *The perceived need for SLT consultation in clinical cases.*

Clinical Condition	***Strongly Agree***	***Agree***	***Undecided***	***Disagree***	***Strongly Disagree***
	%	%	%	%	%
Speech Sound Disorder	15	45	17	20	3
Voice Disorder	6	23	23	40	8
Language Disorder	6	20	18	41	16
Dysphagia	16	28	23	28	6
Specific Learning Disorder	13	48	20	16	2
Stroke	45	48	4	2	1

Interesting responses were also obtained for the clinical conditions, such as language and voice disorders. Most participants (41%) disagreed with the need for an SLT being involved in the assessment and management of the language disorders; which is a core area of practice of an SLT. Although some (20%) agreed and some (18%) were undecided regarding an SLT's role in consultation for language disorders. Similarly, most participants (40%) reported disagreement with the need for an SLT consultation for a voice disorder, with some agreement (23%) and some undecided (23%).

4.5 Awareness of Speech and Language Milestones

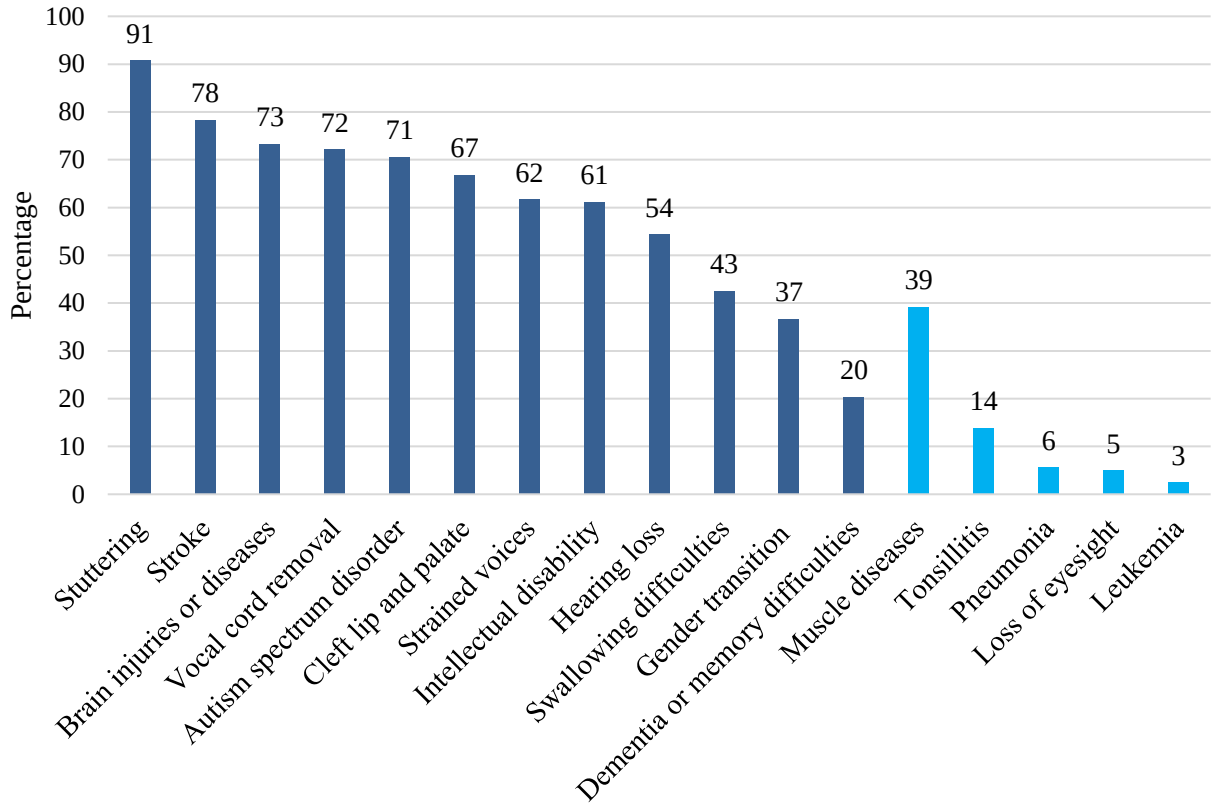
The participants were also asked to rate their understanding of the speech and language milestones of children under the age of four years on a 10-point Likert scale (1 = No understanding, 10 = High understanding). Most participants (76%; *n* = 605) rated their understanding below 5, indicating low understanding and few (24%; *n* = 195) rated themselves above 5 indicating high understanding. This finding corroborates with our earlier findings in which the participants disagreed or were undecided about the need for an SLT consultation in some clinical cases (see section 4.4).

4.6 Knowledge of SLTs' Scope of Practice

The participants were presented with a list of disorders aimed at exploring their knowledge and awareness of the disorders within SLTs' scope of practice. Notably, some disorders come under SLTs' scope of practice, whereas some others did not. For example, the disorders within the scope of practice included stuttering, hearing loss, autism spectrum disorders, intellectual disability, stroke, voice disorders, cleft lip and palate, brain diseases or injuries, cognitive-communicative disorders, and dysphagia. In contrast, the disorders listed that do not typically come under SLTs' scope of practice included, pneumonia, loss of eyesight, leukaemia, muscle diseases, and tonsillitis (see Figure 1 below).

As far as the disorders that come under SLTs' scope of practice, most participants reported stuttering (91%), stroke (78%), and diseases or injuries affecting the brain (73%). Notably, participants were less likely to indicate SLT involvement with some disorders such as hearing loss (54%), dysphagia (43%), voice disorders during gender transition (37%), and dementia or memory difficulties (20%). This result suggests low levels of understanding or uncertainty among participants regarding the scope of practice of an SLT. Although, some disorders listed were in

fact, not falling under SLTs' scope of practice, however, most participants have reported SLTs do work for these disorders. These disorders include muscle diseases (39%), tonsillitis (14%), pneumonia (6%) and loss of eyesight (5%). This is further evidence for reduced knowledge and understanding about the populations with which an SLT works (see Figure 1).



Note: Disorders coming under the scope of practice is coloured dark blue, whereas light blue indicates the disorders that are not falling under the scope of practice of SLTs.

Figure 1. *Participants' knowledge of disorders that do and do not come under an SLT's scope of practice.*

4.7 Aetiology behind Speech, Language and Communication Impairments

Participants were asked to identify potential causes of speech, language and communication impairments. Participants were provided with a range of correct choices except one (fate/karma). In this respect, most participants reported the aetiologies behind speech, language and communication impairments as injury or accident (87%), neurological differences (87%), genetic or family-based causes (80%), diseases or illnesses (72%), and other (2%). Interestingly, few participants' believed fate/karma (5%) as a potential causal factor behind speech, language and communication impairments. Notably, some crucial aetiologies were found to be underemphasized by participants, and these included aetiologies such as parenting practices (48%), older age (48%), environmental toxins (36%), and increased screen time or gadget exposure (15%) (see Figure 2).

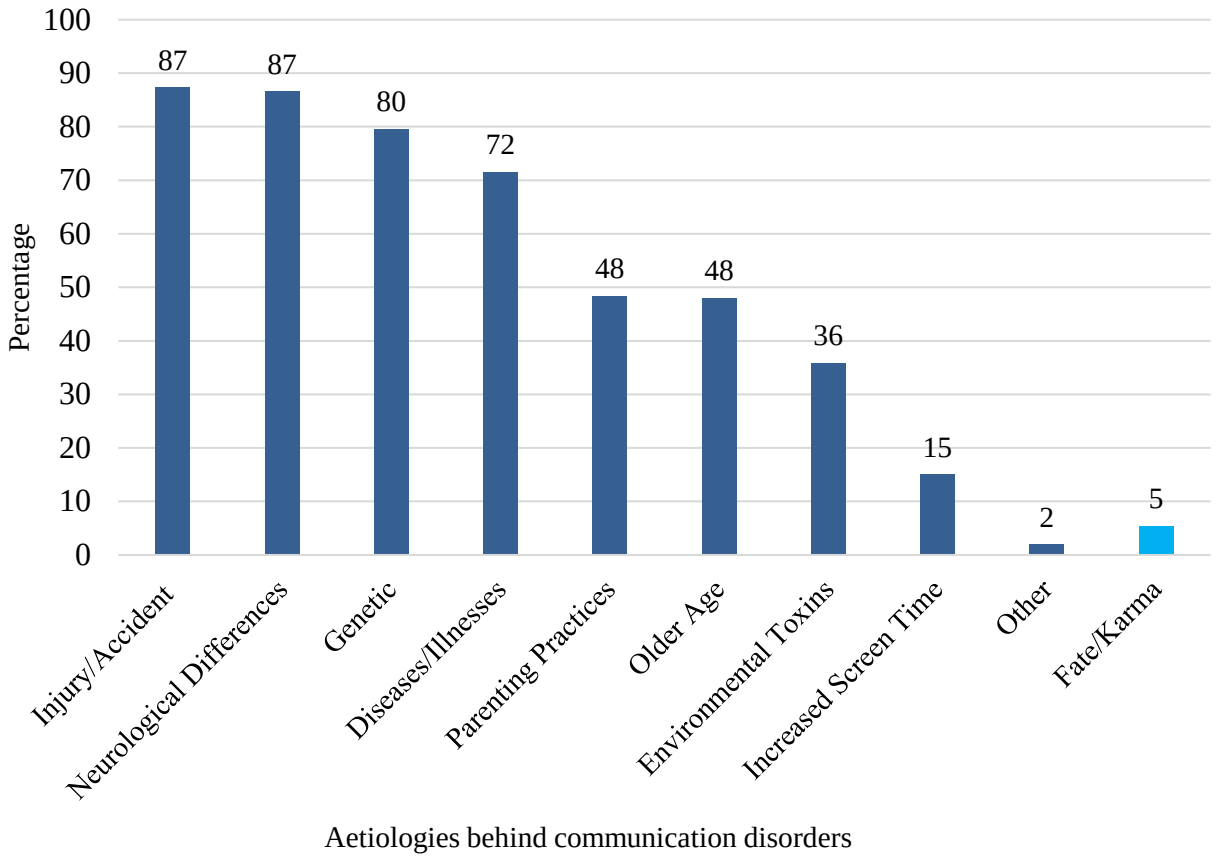


Figure 2. *Participants' knowledge of aetiologies behind communication disorders.*

4.8 Support Needed by an Individual with SLCN

Participants were also asked about the support needs of an individual with SLCN. Response options included clinical assistance, government and community support, equal educational or employment opportunities and others (see QC.12 in Appendix B). Most participants indicated the need for professional assistance by an SLT or Psychologist (86%) or use of assistive devices (83%) respectively. Similar responses can be observed with respect to needing government funding (80%), community support (76%), and equal educational or employment opportunities (74%).

The following question was asked to assess participants' perception regarding consideration and support of individuals with SLCN within their ethnic groups (QC.13. How much

do you agree with the below statement? "*Individuals with speech, language and communication impairments are well-considered and supported in my ethnic group*", see Appendix B). Participants were asked to rate it in their respective ethnicities on a 5-point Likert scale (strongly agree to strongly disagree). The data were tabulated according to their reported ethnicities (see Table 4 below).

Overall, most participants disagreed or strongly disagreed that consideration and support are available to individuals with SLCN within their respective ethnic groups. A large proportion of participants were undecided in this respect (see Table 4).

Table 4. *Perception of support provided to individuals with communication impairments by the participant's ethnic group.*

Ethnicity	**Strongly Agree**	**Agree**	**Undecided**	**Disagree**	**Strongly Disagree**
	%	***%***	***%***	***%***	***%***
NZ/European	6	29	43	19	3
Asian	4	28	35	25	8
Māori	1	21	45	25	8
Pacific peoples	0	10	60	30	0
MELAA	17	25	42	17	0
Other ethnicities	4	16	51	24	4

About 35% of the participants from the New Zealand/European ethnicities agreed to the statement that support and consideration are given to individuals with SLCN in their ethnic group/wider society. However, around 22% of the participants disagreed to the statement, and 43% were undecided. About 42% of the participants from Middle Eastern/Latin American/ African (MELAA) ethnic groups also agreed to the statement; however, 17% disagreed and others were undecided (42%).

4.9 Interest in Working in the Field of SLT

Participants were asked if they were provided with an opportunity, would they like to work in the field of SLT. Most participants (65%; *n* = 516) indicated they do not wish to work in the field. Only a minority (10%; *n* = 78) responded they would like to work and the rest of the participants (26%; *n* = 206) were unsure.

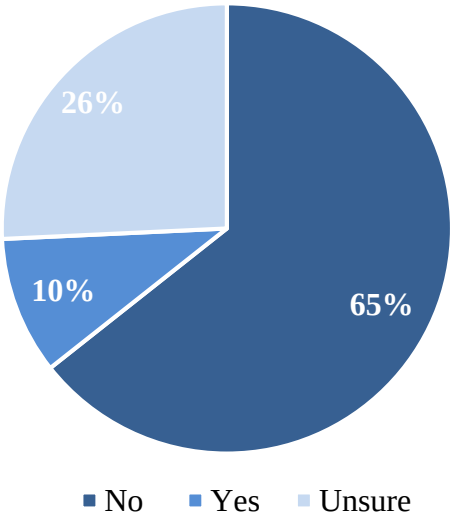


Figure 3. *Participants' willingness to work in the field of SLT.*

Participants were also asked to describe their thoughts on entering the field of SLT. The responses obtained were thematically analysed. The main themes that emerged were: (1) interest, and (2) understanding. The subthemes identified under the main themes included 'positive' and 'negative'. These themes are described below with illustrative quotations from participant responses.

Interest

Participants responded that the field of SLT 'interests' them; however, they probably would not enter into the field as their current career/educational area is different from that of SLT.

> *"I currently have other interests however if it were to fit into my line of work i [sic] would not be opposed to it."*

> *"It might have been a good career path for me. At this point I don't think I'm likely to switch. Always possible though."*

Others stated that the field is quite interesting, but they need to know more to choose SLT as their career.

> *"Have not considered this before, but would like to know more about it as it seems like an interesting and rewarding profession"*

> *"I think I'd need to learn more about what the job and degree entailed then I'd consider whether or not it suited me"*

Conversely, some of them stated that SLT does not interest them, hence, not wishing to enter into the field.

> *"Not something I would personally enjoy"*

> *"Not a field that interests me"*

> *"It is not the specific field that I would like to work in."*

Understanding

Lack of understanding about the field was another sub-theme that derived which became a crucial factor that prevented participants from entering into the field of SLT.

> *"No, because I do not have a full understanding."*

> *"It isn't something that interests me but then again I have very little understanding of it"*

4.10 Interest for Working in Rehabilitation Organisations

Participants were also asked about their level of desire to work for an organisation or institution that provide services to individuals with SLCN. Around 38% (*n* = 307) expressed their opinion as '*no*', whereas 29% (*n* = 234) stated '*yes*' indicative of their agreement in working with such organisations and 32% (*n* = 259) were '*unsure*'.

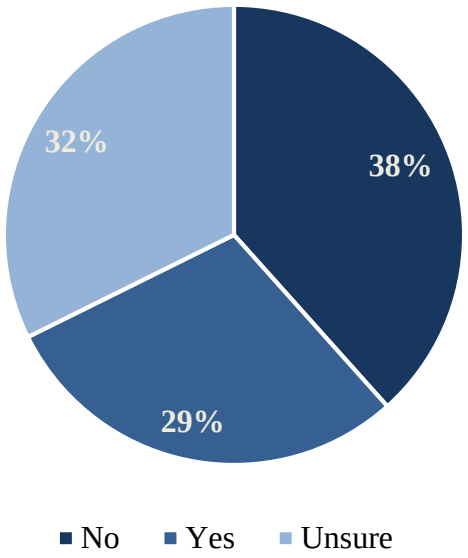


Figure 4. *Participants' willingness to work in the field of rehabilitation organisations.*

These responses were also thematically analysed. The themes obtained were: (1) knowledge, (2) career and (3) interest. These main themes consisted of 'positive' and 'negative' as subthemes.

Knowledge

Most of the participants expressed their lack of knowledge regarding such organisations or institutions and hence could not come to a decision in working with such organisations. Participants responded as follows:

"I am not sure what organisations those might be."

"I am not sure/aware of the potential organizations out there that do."

"I have no information regarding these types of organizations and so cannot make a desicion [decision]."

Career

Similarly, some participants stated that if it relates or can be related to their current work or study area, then they probably will commit working in an organisation that provides services to individuals with SLCN.

"Again, if it were to fit with my line of work i [sic] would be happy for the opportunity"

"If it is relevant to my future work ie people working in prisons with inmates or in the justice system somehow then yes, however if not, no."

Interest

Finally, the participants indicated a high level of interest in helping people. Hence, the participants indicated they would like to work in organisations that provide services to individuals with SLCN.

"Yes I would like to work so that I can help the needful ones."

"My brother has autism and dyslexia. I know how difficult it gets and would love to help kids and people".

"It's a joy to be able to help in the backgrounds even to bring hope and restoration to people who are struggling."

"Always good to work for an organisation attempting to make a positive difference in the world"

"Sure, they're doing God's work"

"As I said before it is still an interesting topic and I am always wanted a job that helps people".

4.11 Supplementary Analysis

The effect of participants' characteristics regarding the awareness of SLT was statistically analysed for determining significance. The Chi-square test was utilised for this purpose. The analysis was carried out in two major personal characteristics, (1) Gender and (2) participants with and without children.

4.11.1 Gender-Wise Analysis

A supplementary analysis was carried out to examine the gender differences with exposure to information about SLT/SLTs (Q.B.1 and Q.B.2, see Appendix B) using a Chi-square test for independence. The gender differences were found in relation to exposure of participants via reading about SLT, $\chi^2(1) = 12.35$, $p < .001$. Females were more likely (37%) than males (25%) to have read about SLT. There were no significant gender differences noticed about viewing or listening to information about SLT. Significance differences were obtained between gender and the willingness to work in the field of SLT, χ^2 (2) =17.73, $p < .001$. Females were more likely (11%) than males (4%) to want to work in the field of SLT. However, no significant differences were observed among gender and the willingness to work in organisations providing support to individuals with SLCN.

4.11.2 Knowledge of Participants with and Without Children

Supplementary analysis carried out among participants with and without children revealed the following. There were significant differences between participants with and without children in terms of their knowledge about SLT/SLTs via reading, χ^2 (1) = 13.96, $p < .001$. Participants with children were more likely (45%) to have read about SLT than participants without children

(30%). Similarly, there were significant differences noted in terms of knowledge from viewing or listening information about SLT, χ^2 (1) = 18.71, $p < .001$ between participants with and without children. Participants with children were more likely (42%) to have knowledge about SLT from viewing or listening to related programs than the participants without children (25%). Relating to working in organisations providing services to individuals with SLCN, significant differences were noted between participants with and without children, χ^2 (2) = 8.28, $p < .001$. Participants with children were more likely (30%) to work in organisations providing support to individuals with SLCN than the participants without children (29%). However, no significant differences were observed between participants with and without children in indicating a desire to work in the field of SLT.

Discussion

The current study investigated the awareness and perspectives about SLT services and communication support needs among New Zealanders. The study also aimed to identify the knowledge, experiences and attitudes of New Zealanders towards individuals with SLCN. Based on the findings, plausible strategies to improve the awareness of the general public will be described. These strategies could be implemented to support the development of future awareness of health care or promotion programs related to SLT and individuals with SLCN.

In this chapter, the findings are discussed and contrasted with previous research. Implications of the findings, study limitations and potential future research directions are also described.

5.1 Levels of Public Awareness about SLT/SLTs

Generally, the findings revealed low to moderate levels of awareness among New Zealanders towards SLT and people with various SLCN. Interestingly, similar findings were reported by other researchers using a similar survey instrument in both developing (e.g., Malaysia, Jordan, Turkey) and developed (e.g., the UK, USA, Australia) countries (Breadner et al., 1987; Chu et al., 2019; Lesser et al., 1986; Mahmoud et al., 2014; Parsons et al., 1983; Uysal et al., 2019). Taken together, these findings reflect not only the global lack of awareness about SLTs in the general population, but also the consistency of these findings over the past 40 years.

Most participants in the current study reported neither reading nor hearing anything about SLT. The participants who noted having read about SLT, identified websites as their major source of knowledge followed by social media. This finding differed from the earlier research by Breadner et al. (1987), which reported that most participants gained knowledge from printed material such as books, magazines, textbooks, and journals. This difference in the modality of knowledge

sources is likely because of increasing technological advancements. These advancements are slowly replacing the traditional research in libraries and the concurrent utilisation of technology in human lives which provides information at one's fingertips (Sarwar & Soomro, 2013). Collectively, it can be suggested that the use of technology in improving public awareness needs to be taken into consideration as it can potentially make desirable and positive changes in creating awareness among the members of the general public (see also Mahmoud et al., 2014).

Further, the participants have heard about SLTs through 'people' referring to both formal (e.g., doctors, teachers) and informal (e.g., parents) sources of this information. This finding is significant as those 'people' are the ones who are usually the primary referrers of individuals to SLT services. As these individuals spend significant time focused on, or with children, they are in a better position to identify the possible delays in an earlier stage itself. For instance, Leatherman et al. (2004) suggested that the parents play a cardinal role in the early identification of speech and language delays and accessing intervention and support lies in increased parental awareness. Similarly, Bailey et al. (2004) mention that the existence of other priorities and concerns in the life of parents are critical components that determine the timely referral of a child for early intervention services.

Likewise, Enderby and Petheram (2000) and Lesser et al. (1986) revealed teachers as an influential group of referrers of children for investigation of potential speech and language impairments. This is due to their regular involvement with children who experience SLCN. Hence the authors put forth the suggestion of including information regarding SLT profession and communication impairments in the pre-service curriculum of teachers. Enderby and Petheram (2000) also reported that physicians are among the top-five referrers of individuals with SLCN to SLT services. Taken together, the knowledge of these professionals plays a critical role in

providing an on-time referral. Thus, aiding in the early identification and subsequent intervention of the individuals with SLCN (Enderby & Petheram, 2000; Leatherman et al., 2004; Lesser et al., 1986; Vameghi et al., 2015).

Most participants in the current study reported never meeting an SLT, neither among their family, friends, nor colleagues. This is not surprising as this finding is consistent with the finding of low levels of awareness of SLT. The participants indicated their understanding of an SLT's work in health and educational settings. Specifically, most participants considered that an SLT works in private clinics more than in hospitals. The responses revealed the limited knowledge and awareness of the participants regarding other employment settings (e.g., tertiary education, secondary schools, and kindergartens). Notably, some participants reported they do not know where an SLT works, which in fact can lead to potential delays, or at times negligence in seeking timely services from the professionals which were similar to the findings reported by Mahmoud et al. (2014).

5.2 Knowledge about the Population and Disorders Serviced by SLTs

A majority of participants partially identified the age groups serviced by an SLT (i.e., infants, preschool children, geriatrics etc.). Compared to some previous studies, the overall trend in identification remained the same, but the results showed slightly higher percentages in identifying the age groups served (e.g., Breadner et al.,1987; Mahmoud et al., 2014). For instance, most participants reported that an SLT works with primary school children, teenagers, preschool children, and adults. Although, only some participants believed that an SLT works with infants and the elderly population. This finding further indicates the general lack of awareness about SLTs' work profile with infants (see also Breadner et al., 1987). However, SLTs play a crucial role in assessing and intervening both paediatric and as well as geriatric population. SLTs have

significant roles in supporting children with global developmental delays and if the child has an associated syndrome (Regis et al., 2018). In these clinical conditions, SLTs play a critical role in educating parents or caregivers and in early identification and interventions through which critical periods of language development can be utilised to its core (Keasler, 2000). Similarly, SLTs have an essential role in assessing and providing intervention services among the geriatric population too. SLTs deal with several cognitive-communication disorders (e.g., stroke, dementia, encephalopathy, traumatic brain injury etc.), swallowing disorders, and communication disorders (ASHA, 2020c; Frith et al., 2014).

In short, SLTs have a prominent role in preventing, assessing and treating disorders relating to communication, cognition, and swallowing through promoting a healthy lifestyle and educating the public. Therefore, there is a crucial need for these lesser-known facts to be highlighted and propagated effectively by the clinicians to the general public. This will help the public to understand the fact that SLTs are qualified and professionally trained to treat these age groups (see also Breadner et al., 1987; Mahmoud et al., 2014).

5.3 Understanding about Speech and Language Milestones

The participants were also asked to rate their understanding about the speech and language milestones of children under the age of four years. Most participants rated themselves as having a low understanding, and few rated themselves as having a high understanding. Further examination of the data revealed that participants without children showed relatively low levels of understanding compared to the participants who were parents. This indicates the increased awareness among participants with children (parents) when compared with the ones without children.

Children's delays or deviations in speech and language can be understood only if one knows about the normal patterns of speech and language development (Keasler, 2000). Understanding the milestones enables and equips parents or caregivers to monitor the child's speech and language development and thus to consult an SLT in case there are any deviations in the development. Children with atypical speech and language development are at a greater disadvantage, especially when their parents are uncertain about normal speech and language development (Keasler, 2000).

The primary purpose of early identification lies in the utilisation of 'critical periods' which are pivotal maturational points in the life of a living being (Newport, 2001). This is a period wherein pinnacle learning occurs that results in typical behaviour accustomed to the specific environment to which the organism is exposed. However, lack of exposure to the learning experience during this period will result in limited outcomes, and in extreme cases, may not affect at all (Newport, 2001).

5.4 Knowledge about Speech, Language and Communication Disorders

In the survey section titled 'C', participants were asked to make explicit judgements on some clinical cases regarding the perceived need for an SLT consultation. There were six 'clinical cases' of speech, language, and communication disorders among paediatrics and adults described (see Appendix B). These questions aimed to assess the participants' knowledge about various speech, language and communication impairments. The clinical cases included speech sound disorder, voice disorder, language disorder, dysphagia, specific learning disorder, and stroke. It is interesting to note that a majority of participants were able to make accurate judgements on specific learning disorder (48%), stroke (48%) and speech sound disorder (45%) indicative of participants' understanding that these disorders come under the scope of practice of an SLT.

In contrast, more participants (41%) disagreed with the fact that an SLT being essential when it comes to the assessment and management of language disorders; which is a core area of practice of an SLT. Similarly, regarding the voice disorder, most participants (40%) disagreed, which indicates the trivial need for an SLT consultation in this condition. Similar findings can be found in the studies of Chu et al. (2019) and Mahmoud et al. (2014) wherein, the participants had difficulties identifying the need for SLT input for individuals with language and voice disorders. This is a clear indication of the low levels of knowledge among the public regarding language and voice disorders. However, these are some core practice areas of SLTs and they are the professionals essential to the assessment and intervention of these disorders (ASHA, 2020b). Therefore, educating about these disorders and an SLT's role in these disorders will enhance the early identification and reduce the significant delays in seeking intervention services on time. These findings are congruent with the findings of Breadner et al., 1987, Chu et al., 2019, Mahmoud et al., 2014, and Uysal et al., 2019. Notably, a mixed finding was obtained for dysphagia, wherein, an identical proportion of participants either agreed (28%) or disagreed (28%). This is also an indicator of lower levels of knowledge the participants had about an SLT's role in supporting individuals with dysphagia.

When asked about the disorder groups with which an SLT works, a majority of the participants (91%) believed that an SLT treats stuttering primarily. Similar findings have been reported by other researchers, wherein the majority of the participants in those studies have also identified stuttering as the major disorder treated by SLTs (Breadner et al., 1987; Chu et al., 2019; Mahmoud et al., 2014; Uysal et al., 2019). Followed by stuttering, most participants in the current study have identified stroke and diseases or injuries affecting the brain as some of the disorders treated by SLTs. Nevertheless, less than half of the participants reported SLTs as working with

clinical conditions such as dysphagia, people transitioning between genders (about their voice), other voice disorders, and dementia or memory difficulties. The lack of awareness of SLTs potential support for individuals with these clinical conditions increases the risk that they may not be referred to services and would result in an under-utilisation of SLT expertise.

Notably, a 'Disability survey' conducted in Aotearoa New Zealand in 2013 revealed that almost 5% of the adults had memory issues and it is observed to be directly correlated with their age (Disability | Stats NZ, 2013). As the survey was carried out seven years ago, it is possible that the number of individuals affected by memory difficulties would have increased, based on the ageing nature of the population in Aotearoa New Zealand. Therefore, the role of an SLT comes into place and becomes important for assessment, diagnosis and the intervention sessions augmenting the individuals with these impairments in order to improve their quality of life. Hence, understanding the role and significance played by these professionals and their scope of practice becomes a necessity. Another interesting finding was that few of the participants reported that an SLT works with conditions such as muscle diseases (39%), tonsillitis (14%), pneumonia (6%), and individuals who have lost their eyesight (5%), which generally does not fall within an SLT's scope of practice unless the individual has a concomitant communication difficulty (e.g., children with cerebral palsy who experience vision difficulties). These inaccurate perceptions may lead to possible delays in family members or professionals consulting the concerned professionals who treat these disorders. This also suggests a need to increase the levels of public awareness about the SLTs' scope of practice.

5.5 Awareness about the Aetiologies Related to Speech and Language Impairments

Most participants (87%) indicated that an injury to the brain or body was a potential cause for speech and language impairments. Other aetiologies indicated by most participants were neurological differences, followed by genetic or family-based aetiologies. All the major aetiologies indicated by the participants can contribute to speech and language impairments. Although, only less than half of the participants identified and supported some major aetiologies contributing to speech and language impairments such as parenting practices, older age, environmental toxins, and increased screen time and technology overexposure. However, all these aetiologies are influential in causing speech and language impairments.

Studies reveal that parent-child interactions have a healthy and positive relationship in developing children's speech and language (Safwat & Sheikhany, 2014). The earlier studies reveal that promoting parental responsiveness and reducing directiveness in the language used by parents can support the development of children's linguistic skills and can create an environment for children to interact more positively (Tannock et al., 1992). Similarly, Roberts and Kaiser (2011) reported that among children with and without intellectual disabilities, training parents to be child-centred in their interactions has gained significant and positive influence on both receptive and expressive language skills. The understanding of the significance of such appropriate parental practices, has paved the way for developing several intervention programs involving parents such as Parent-Child Interaction Therapy (PCIT) (Tempel et al., 2009).

However, inappropriate parental practices can have detrimental effects as well in the development of speech and language skills in children. For instance, the recurrent use of statements that are directive and corrective such as criticisms and commands are likely linked with language delays in children (Barnes et al., 1983; Hart and Risley, 1995 & Vibbert and Bornstein, 1989).

Therefore, it is necessary to be aware of the appropriate parental practices which can have a positive impact on developing child/children's linguistic skills.

Only less than half of the current study participants identified this factor (parental practices) as a potential aetiology causing speech and language impairments. This, in fact, is a clear indication of the lack of awareness of the participants regarding such a causal factor behind speech and language impairments.

Likewise, environmental toxins also have detrimental effects on hearing, language, cognition, and behaviour and learning, which are well-established by previous researchers. However, only some participants' (36%) from the current study could identify that the exposure to 'environmental toxins' can have detrimental effects on the linguistic development or is a crucial contributing factor to speech and language impairments. There are several researches carried out in this respect. A recent study revealed that continued use of toxic chemicals (e.g., household cleaners) by mothers of children from lower-economic categories correlated with delays in language development by the age two which also had a negative effect on the cognitive development of the child (Jiang et al., 2020). This is because of the delicacy of brain development in an infant's initial life years and their vulnerability to chemical exposure (Jiang et al., 2020). Each type of toxin has its detrimental effects. For instance, exposure to chemicals such as manganese and arsenic in children living near hazardous waste sites relates more to verbal I.Q (Intelligence Quotient) deficits than non-verbal I.Q deficits. Alongside verbal memory for narratives and wordlists were also impaired than neuropsychological skills (ASHA, 2020d).

Several studies have reported the detrimental effects of increased screen exposure and its corresponding negative influences on speech and language development (van den Heuvel et al., 2019). However, participants in the current study failed to report this significant finding. Only a

few participants (15%) reported that ‘increased screen time/gadget exposure’ can be a causal factor behind speech and language impairments. This, in turn, reflects the lack of awareness of the participants about the aetiologies behind speech and language impairments. Previous studies reveal that increased media viewing has a deleterious effect on language development in the earlier years of an infant's lives. For instance, an increase in 30-minutes use of mobile media attributes to 2.3 times increased risk for expressive language delay in 18-month old children (van den Heuvel et al., 2019). It is reasonable that substantial exposure to an absorbing, but not developmentally constructive stimuli could affect brain development and language acquisition (Zimmerman et al., 2007). Furthermore, the increased screen exposure reduces the parent-child interaction, which is a crucial factor via which language development occurs in children (van den Heuvel et al., 2019).

5.6 Knowledge about the Type and Duration of SLT Intervention

Participant responses to the questions regarding the types of support or services provided by an SLT and the length of time required to see benefits from SLT intervention provided novel findings. About the support or services provided by an SLT, the majority of the participants (93%) accurately identified the ‘behaviour therapeutic’ approach. Although, a few participants reported that an SLT provides pharmacological and surgical intervention which is not accurate. This knowledge could prevent people from seeking SLT services due to a reluctance about pharmacological or surgical interventions. It is essential to rectify this misconception among the general public in order to support engagement with speech therapy services.

When asked about the length of time needed to see the benefits of SLT intervention, most participants (65%) indicated that this was variable depending on the condition and the individual. This is accurate, as improvements seen in speech, language and communication skills post-

intervention are dependent on individual attributes, such as age, gender, education, clinical condition, and severity of the condition (Bunning, 2004). Although, few participants (3%) reported that improvements in speech, language and communication skills could be obtained immediately (within a month) post-intervention. This may be accurate for some conditions (individual speech sound corrections); however, it is not applicable for the majority of the clinical conditions. It is argued that unrealistic expectations can be detrimental when the individual is not able to see desired changes within the expected time (Lawton et al., 2018). This could contribute to a loss of trust and interest in seeking speech and language intervention in the future.

5.7 Knowledge about Educational Background and Professional Titles of SLTs

There were several questions designed to examine the participants' awareness and knowledge related to the SLT profession (see section 4.2). Firstly, as far as the training of an SLT is concerned, more than half of participants (60%) indicated that three to four years of training is required to become qualified practitioners. Although participants correctly recognised the need for specialised training (see section 4.2). However, it takes four to five years to complete an SLT training in Aotearoa New Zealand (not three to four years). This finding reflects a moderate level of awareness.

Secondly, half of participants reported that a 'speech-language therapist' (SLT) could also be called as 'speech-language pathologist' (SLP). However, a similar proportion of participants (42%) were either unsure or indicated the statement was false. Both the titles '*speech-language therapist' (SLT)* and '*speech-language pathologist' (SLP)* can be used interchangeably. The professional title varies across countries (Cummings, 2018). For instance, the title *speech-language pathologist (SLP)* is used in countries such as the USA, Australia and Canada, wherein, the title *speech-language therapist (SLT)* is used in countries such as the UK and Aotearoa New

Zealand. This finding suggests that that the professional title of an SLT can be a source of confusion. Therefore, it is argued that specific terms should be used consistently (e.g., therapists or pathologists) not only in health awareness and promotion but also within the field to resolve uncertainty among the public.

Similarly, when asked whether An SLT can be called a ‘doctor' or not, most participants indicated it accurately as false. An SLT can only be called a doctor if the individual has completed a ‘Doctoral/ PhD’ programme. However, a majority of participants either reported it as true (21%) or were unsure (38%). It is essential to avoid the overlap between SLTs with other professionals, like doctors, teachers, special educators, resource teachers, etc., who are not necessarily knowledgeable about speech, language, and communication disorders. There is a scope for public education in order to support individuals to seek services from SLTs who have the required qualifications.

Interestingly, most participants reported that a referral from their whānau/family GP is not necessary to consult an SLT. This finding is appropriate as not all physicians are knowledgeable about the speech therapy, or speech and language impairments. For instance, Bailey et al. (2004) reported that the failure and hesitation of paediatricians in referring young children with mild disabilities to early intervention services. They added that the difficulty in using and comprehending assessments and standardized tests for behavioural and developmental screening are factors that delay the timely admission of children with various developmental disorders to early intervention services (Bailey et al., 2004). Notably, one-third of the participants agreed that a physician’s referral is required for an SLT consultation. This finding suggests that educating physicians are crucial. Collectively, these findings corroborate with that of Breadner et al. (1987). It is therefore essential to educate the general public on the fact that a referral is not necessary for

an SLT consultation. This may help individuals with SLCN, or their whānau, to seek immediate support from SLTs rather than prolonging the referral process. In speech therapy interventions, it is always believed that 'the earlier, the better'. Especially in the case of children, there are a lot of advantages in identifying a clinical condition as early as possible so that the 'critical periods' of development can be utilised to a full extent.

5.8 Support Services and Consideration to Individuals with SLCN

When asked about participants expectations from the society in supporting the individuals with SLCN, most participants reported the necessity to seek services from professionals (e.g., SLTs, Psychologists). Also, participants identified the significance of other support services such as the use of assistive communication tools (e.g., communication boards or books, text-to-speech devices), a need of government funding for support services and the importance of providing equal educational and employment opportunities. These findings differed from those reported by Baskaran (2000) who reported participants from Asian countries reluctance to seek professional help as they considered speech and language difficulties to be the result of fate and determined by God. However, the findings of a Fijian study concluded that participants indicated the need to support individuals with SLCN via their behaviours (e.g., communication styles), teaching new skills, praying for the affected individual, making environmental modifications, using traditional medicines, Western medicines and or traditional belief and practices (Hopf et al., 2017). Brison (2007) stated that these reactions are firmly centred in Fijian tradition of respect for the universal love for their community. Collectively, these findings reveal the prevailing differences in the attitudes of varying ethnic groups in terms of their motivation in seeking support services and further remediation. This topic, in turn requires further investigation to determine specific ethnic similarities and differences about seeking services. SLTs could potentially play a role in

ameliorating the understanding of people within specific ethnic groups regarding speech, language and communication disorders and the need for timely support.

The participants were asked about the consideration and support offered within their ethnic group towards individuals with SLCN. Overall, most participants from the ethnic groups (Māori, Asian, pacific peoples, and others) either disagreed or strongly disagreed to the statement that consideration and support are available to individuals with SLCN within their respective ethnic groups. However, a large proportion of participants were undecided in this respect (see Table 4 above). When compared to other ethnic groups, the responses of NZ/Europeans and individuals from MELAA ethnic groups agreed to the statement that consideration and support is offered to individuals with SLCN in their wider society. This finding requires further investigation to determine how to ensure that appropriate levels of culturally relevant services are available for people in Aotearoa New Zealand.

Few studies have investigated the attitudes or perspectives of members in the society regarding individuals with SLCN. There are differences in how the affected individuals and their families have been supported. Some ethnic groups have a positive attitude towards disability, and some others do not (Baskaran, 2000; Chu et al., 2019). Wylie et al. (2017) reported that Ghanaian community members are likely to engage in several strategies to offer support for individuals with SLCN. Similarly, Hopf et al. (2000) reported the active support offered by Fijian community members towards individuals with SLCN. However, it can be inferred that support services provided for individuals with SLCN vary between ethnic groups (Chu et al., 2019). Therefore, it is suggested that further information to understand the prevailing attitudes and beliefs about 'disability' among the ethnic communities will, in turn, help to determine influences on public awareness and areas to target public awareness initiatives potentially. Taken together, increasing

public awareness and supporting positive and optimistic attitudes towards individuals with SLCN will likely serve to enhance the quality of lives of individuals with SLCN.

5.9 Interest to Work in Speech and Language Rehabilitation Organisations

Participants were asked about their interest in working with organisations providing support services to individuals with SLCN (see 4.10 above). Participants' responses reflected either as ‘no’ or ‘unsure’. The thematic analysis derived ‘understanding’, ‘career’ and ‘interest’ as major themes. Most participants reported that they did not wish to work in such organisations as they are unaware of the organisations and the activities undertaken by these organisations. This finding further supports a need to develop awareness about SLT. These awareness initiatives could incorporate as much information as possible to illuminate the profession and develop public knowledge. However, there were some participants (29%) who did express interest in working with such organisations as they consider SLT to be noble work and of assistance to fellow human beings.

5.10 Interest in Working in the Field of SLT

In response to the question about interest in working in the field of SLT, most participants reported either ‘no’ or ‘unsure’ (see 4.9 above). A minority (10%) indicated their desire to work in the field. The thematic analysis revealed ‘interest’ and ‘understanding’ as the two major themes underpinning participants’ responses. These qualitative responses revealed participant’s lack of interest and a limited understanding about the field as some factors that may prevent individuals from seeking out information or attempting to enter the SLT profession.

Globally, the number of SLT professionals are limited (Byrne, 2010). If it is the lack of subject knowledge which prevents individuals from entering into the profession, there exists a need to consider and begin initiatives in developing awareness programs (Byrne, 2010). The

current/practising or retired SLTs should consider this aspect which could support an expansion of the profession.

5.11 Supplementary Analysis

The significance between certain participant demographic characteristics and responses to the survey were investigated using a Chi-square test for independence. The participant characteristics considered in the analysis were (a) gender and (b) participants with and without children. Findings suggested that females were likely to have more knowledge about SLT than males. Similarly, females were more likely to indicate an interest in working in the field of SLT than males. This aligns with the significant gender disparity in practising SLTs (Litosseliti &Leadbeater, 2013; Plessis, 2018). Another finding was that participants with children were more likely to have obtained knowledge via reading and viewing information related to SLTs than the participants without children. Likewise, participants with children expressed more interest in working in organisations providing support to individuals with SLCN than participants without children. These findings likely relate to experience as a parent and exposure to speech and language development of their children.

5.12 Practice Implications

Since 1980, there has been a consistent trend observed by researchers about the general public's awareness about the SLT profession and individuals with SLCN (Breadner et al., 1987; Chu et al., 2019; Husband, 1980; Lesser et al., 1986; Mahmoud et al., 2014; Parsons et al., 1983; Uysal et al., 2019). For the past four decades, research findings reveal that awareness of the general public about the profession of SLT remains low to moderate. It is time to consider this issue and seek ways to increase the knowledge and the awareness about the field effectively. For example, teaching and informing the public using visual and audible educational resources such as online

media, flyers, open invites, lecture presentations and radio interviews can be considered as potential measures to improve awareness.

Methods for Improving Awareness about SLTs and the Profession of SLT

Engaging SLTs and the organisations tasked with supporting the profession could engage with marketing professionals to design awareness programs. These programs could describe and present the SLT profession to educate the general public and other professionals. For example, a series of engaging sessions designed to target secondary school could be developed and circulated. These could include some major points such as who an SLT is, SLTs' scope of practice, the population with which an SLT works, and the professional work settings. Alongside, the secondary effects of speech and language disorders, especially in case of children and the consequences of delaying intervention procedures could also be considered.

Similarly, an awareness programme targeting a variety of professional and non-professional communities could be established utilising social media technologies. While awareness by itself does not inherently modify the attitudes of people, it may be an important factor in cultivating more favourable attitudes towards individuals with various SLCN (O'Malley-Keighran & Coleman, 2013). The implementation of an awareness programme needs to be carried out gradually, not only at the national level but also internationally and should be monitored for its efficiency and effectiveness.

A vital factor for the growth and development for the field of SLT is 'professional marketing', which many SLTs fail to recognise or disregard it (Bowman, 1987). Marketing primarily involves the analysis, planning, implementation and control of the programs designed. Another motive behind marketing is to build relationships that are mutually beneficial-for instance, the relation between SLTs and their potential clients. Marketing is a management tool. A

professionalised marketing management approach will help the SLT profession shape its future (Bowman, 1987).

Similarly, service promotion is an area that could support the growth of the profession. It consists of three crucial and interlinked factors (1) *personal contacts*, (2) *public relations* and (3) *advertising*. According to Bowman (1987, p. 98), “a fundamental misconception that many SLTs have about marketing is that it involves hard 'selling' which is unethical and unprofessional”. Personal contacts comprise ‘personality’ and ‘proposals’. Proposals regarding SLT services can be made and can be considered for making contractual agreements with organisations such as hospitals, community health centres or early childhood education centres.

Public relations are related to strengthening the reliability, and the communication provision that promotes the public’s awareness regarding a challenge, service, even a profession and the recognition of it (Bowman, 1987). Some examples of public relations tools include podcasts, brochures, newsletters, speeches, and seminars. Public service activities such as free hearing tests, special sessions on speech and language impairments in communities or organisations could be made available. Finally, advertising could be contemplated as a way of marketing. In the currently booming technological era, the use of social media and online platforms will support the SLT profession in communicating awareness about the field and scope of practice to the broader society (Bowman, 1987).

Interprofessional education (IPE) is another critical area for consideration. IPE could improve collaboration between professionals across various disciplines and also support enhanced patient care (Lumague et al., 2006). An interprofessional treatment approach equips professionals from different fraternities to share their unique perspectives in achieving a common goal of providing the best possible care and optimising outcomes for patients or clients (Parsell & Bligh,

1998). As most speech and language impairments (e.g., ASD, cleft lip and palate, cognitive impairment, aphasia etc.) require support from diverse professionals (e.g., neurologists, surgeons, psychologists, occupational therapists, dieticians, teachers, special educators etc.) educating those professionals is an important role for SLTs. This is likely to support high levels of trust, communication and collaboration between these professionals (Barr, 2002).

5.13 Study Limitations

The findings of the current study must be considered alongside the limitations present. Although participants represented a range of ethnic groups, participation by Māori (9%) and Pasifika (2%) was not reflective of the overall Aotearoa New Zealand population demographics. As the study was carried out via online platforms, the study was not accessible to individuals who are neither keen on social media nor have difficulty accessing social media. For example, elderly and individuals who may have low levels of technological literacy. The participant sample was generally well-educated and competent enough to use social and electronic media. To overcome such a sampling bias, certain methods such as systematic telephone interviews, face-to-face interviews, and pen-and-paper methods could be considered in the future.

To understand the attitude of the public towards SLT and individuals with SLCN, the current survey included three questions (see section C in Appendix B). However, limited conclusions can be drawn from the responses to these questions. The survey could have included more questions in order to obtain a more detailed understanding of the attitudes and perspectives of individuals towards SLT and individuals who experience various SLCN.

5.14 Future Research Directions

The current research study is the first reported study in Aotearoa New Zealand attempting to understand the awareness of SLT profession/professionals among the members of the general public. The current research will provide a base for the future researchers in conducting studies related to awareness in the field of SLT and other allied health and education professions.

Future research is essential to understand why low levels of awareness about SLT/SLTs are present among the general public. This could be extended to examine the awareness of SLT among professionals such as various allied health and non-health professionals. Additionally, investigations could be carried out precisely with Māori and Pasifika participants to determine specific cultural, linguistic or practice barriers and facilitators to awareness and understanding of SLT and speech and language impairments. Likewise, the research could also be undertaken within various ethnic groups to understand what attitudes and perspectives the individuals in those specific ethnic groups have towards individuals with various SLCN.

It is suggested that future researchers could obtain information to examine the expectation of an SLT's intervention duration. This, in turn, will encourage the members of the general public to seek services from SLTs when required and to have realistic expectations which is an inevitable factor for continuing seeking the intervention services.

Researchers could also study the correlations between other demographic variables and the corresponding level of awareness of SLT/SLTs. For instance, the effect of gender, age, area of work or education, socioeconomic levels and based on whether the participants have children or not. Finally, research on designing and establishing an awareness programme is important to improve awareness regarding SLT and speech and language impairments. Also, the research

should aim to measure pre- and post-programme awareness levels to understand the efficiency and effectiveness of the awareness programme carried out.

5.15 Conclusion

The current study set out to explore the understanding of New Zealanders regarding the profession of SLT and individuals with SLCN. An online survey was carried out for this purpose. A response sample of 800 surveys was obtained. The results indicate that low to moderate levels of awareness is present among members of the general public. This finding is consistent with other international studies over the past 40 years (Breadner et al., 1987; Chu et al., 2019; Husband, 1980; Lesser et al., 1986; Mahmoud et al., 2014; Parsons et al., 1983; Uysal et al., 2019). This low levels of awareness is less than desirable for the growth and development of the SLT profession, the prevention of communication disorders and the provision of services for individuals with diverse speech, language, and communication impairments. The current study has also added novel findings to the research base.

Moreover, the current study appears to be the first study in Aotearoa New Zealand that looked explicitly at the awareness of the general public towards the profession of SLT. SLTs must continue to provide services for individuals with communication and swallowing disorders and determine ways to increase the awareness and understanding of the significant work they do. The general public must be supported to understand the SLT profession and professionals better so that they are equipped to seek SLT services when needed in the future.

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Appendices

Appendix A: Ethical Approval Letter

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

HUMAN ETHICS COMMITTEE

Secretary, Rebecca Robinson
Telephone: +64 03 369 4588, Extn 94588
Email: human-ethics@canterbury.ac.nz

Ref: HEC 2020/40

15 June 2020

Juhy Paily
Psychology, Speech and Hearing
UNIVERSITY OF CANTERBURY

Dear Juhy

The Human Ethics Committee advises that your research proposal "Public Awareness of Speech-Language Therapy Services and the Communication Support Needs of New Zealanders" has been considered and approved.

Please note that this approval is subject to the incorporation of the amendments you have provided in your email of 10th June 2020, **and the following:**

- *In question 4 of the survey, please use the wording "Do any of your family members, friends, or colleagues work as a speech-language therapist?".*

Best wishes for your project.

Yours sincerely

pp. R. Robinson

Professor Geoffrey Rodgers
Deputy Chair
University of Canterbury Human Ethics Committee

Appendix B: Qualtrics Survey

School of Psychology, Speech, and Hearing
Telephone: +64 3 369 5090
Email: juhy.paily@pg.canterbury.ac.nz
1 June 2020
HEC Ref: TBC

Section A

Demographic Information:

QA.1. Gender:

a. Female

b. Male

c. Other

d. Prefer not to say

QA.2. Age (in years).

(Please state)

QA.3. Have you ever worked as a speech-language therapist?

a. No

b. Yes

QA.4. What ethnic groups do you identify as? (Please select all that apply)

a. European

b. Māori

c. Asian

d. Pacific peoples

e. Middle Eastern/Latin American/African

f. Other ethnicities (please state)

QA.5. Which is the highest level of education you have completed?

a. NCEA Level 1/5th Form School Certificate

b. NCEA Level 2/6th Form Certificate

c. NCEA Level 3/Bursary

d. Certificate/ Diploma - enter NZQA level if known

g. Bachelor's degree

i. Postgraduate Diploma/Certificate

j. Master's degree

k. PhD

l. Other - please state

QA.6. Which of the following categories best describe your total annual family income?

a. $14,000 or less

b. $14,001 to $48,000

c. $48,001 to $70,000

d. >$70,000 or above

QA.7. Where do you live in New Zealand?

a. Northland

b. Auckland

c. Waikato

d. Bay of Plenty

e. Gisborne

f. Hawke's Bay

g. Taranaki

h. Whanganui- Manawatu

i. Wellington

j. Marlborough

k. Nelson- Tasman

l. West Coast

m. Canterbury

n. Otago

o. Southland

QA.8. Do you have any tamariki/children?

a. No

b. Yes

QA.8.1 If yes, please indicate the number of tamariki/children you have in each age group.

a. Under 2 years of age

b. 2 – 5 years

c. 6 – 9 years

d.10 – 13 years

e. 14 – 17 years

f. 18 + years

QA.9. Have any of your tamariki/children received speech-language therapy services?

a. Yes (please describe)

b. No

SECTION B

A speech-language therapist provides services to tamariki/children and adults with a variety of communication, language and health needs.

The first section of this survey relates to the terms “speech-language therapy” and “speech-language therapists” and what these mean to you.

QB.1. Have you ever read anything about speech-language therapists?

a. No

b. Yes, please continue with the question below.

QB1.1. Where have you read anything about speech-language therapy? (Please select all that apply)

a. Websites

b. Social media (e.g., Facebook, Instagram)

c. Email

d. Book/ Magazine

e. Brochure/pamphlet

e. Other (please state)

QB.2. Have you ever viewed or listened to information about speech-language therapy?

a. No

b. Yes, please continue with the question below

QB.2.1. Where have you viewed or listened to information about speech-language therapy? (Please select all that apply)

a. TV (e.g., news or current affairs)

b. Online video or audio (e.g., YouTube or Podcast)

c. Radio

d. Presentation or Lecture (in person)

e. People (e.g., parents, teachers, doctors)

f. Other (please state)

QB.3. Do you know or have you ever met a speech-language therapist?

a. No

b. Yes - please describe (e.g., social, professional situation)

QB.4. Do any of your family members, friends, or colleagues work as a speech-language therapist?

a. No

b. Yes - please describe (e.g., a friend of another friend, relative etc.)

QB.5. Where do you think speech-language therapists typically work? (Please select all that apply)

a. Preschools/ Kindergarten

b. Primary schools

c. Secondary schools

d. Tertiary education (e.g., polytechnics/ Universities)

e. Hospitals

f. Supported living/ rehabilitation units

e. Private clinics

f. Other (please specify)

g. I do not know

QB.6. Do you think somebody would require a referral from their whānau/family doctor to see a speech-language therapist?

a. No

b. Yes

c. Not sure

QB.7. Speech-language therapists work with… (Please select all that apply)

a. Infants (birth to 1 year)

b. Preschool tamariki/children (2 to 4 years)

c. Primary school tamariki/children (5 to 11 years)

d. Teenagers (12 to 17 years)

e. Adults (18-35 years)

f. Adults (35-69 years)

g. Adults (70+ years)

QB.8. What kinds of support or services do you think a speech-language therapist can provide? (Select all that apply)

a. Surgical

b. Behaviour Therapeutic

c. Pharmacological (medicines)

d. Counselling support

e. Other (please specify)

QB.9 How long might it take for you to see an improvement in speech, language and communication skills post intervention?

a. Immediately (e.g., within a month)

b. Short term (e.g., 1 to 5 months)

c. Long term (e.g., more than 6 months)

d. Variable: depending on the conditions and the person.

d. Unsure (please comment)

QB.10. In your understanding, how many years of tertiary (University) training are needed for speech-language therapists to become qualified practitioners?

a. None

b. At least one year

c. At least two years

d. At least three to four years

e. At least four to five years

f. More than five years

QB.11. Please indicate True – False or Unsure for these statements according to your thoughts.

a. A speech-language therapist may also be called a doctor.

1. True
2. False
3. Unsure

b. A speech-language therapist may also be called a "speech-language pathologist".

1. True
2. False
3. Unsure

SECTION C

In this section, you will read various situations. For each of the situations, please rate your thoughts whether a speech-language therapist could provide support or not.

QC.1. Amelia, age 5, can't say the "s" sound. She uses the "th" sound instead. For example, she says "thpoon" for "spoon." Should Amelia be seen by a speech-language therapist?

1. Strongly agree 2. Agree 3. Undecided 4. Disagree 5. Strongly Disagree

QC.2. Aroha, age 39, a teacher by profession complains that she has a "rough/scratchy" voice along with neck pain and body tiredness. Should Aroha be seen by a speech-language therapist?

1. Strongly agree 2. Agree 3. Undecided 4. Disagree 5. Strongly Disagree

QC.3. David, age 3, uses about 50 different single words and is starting to use words together (e.g., "want milk"). He understands simple questions and can point to pictures and parts of his body when you name them. Should David be seen by a speech-language therapist?

1. Strongly agree 2. Agree 3. Undecided 4. Disagree 5. Strongly Disagree

QC.4. Matilda, age 68, has had a lump removed from her throat. She now has difficulty swallowing and frequently drools while she eats. Should Matilda be seen by a speech-language therapist?

1. Strongly agree 2. Agree 3. Undecided 4. Disagree 5. Strongly Disagree

QC.5. Eloise, age 8, has difficulty with reading, writing and talking with unfamiliar people. She does fine talk with her whānau/friends and family. The school plans to give her a group of tests to find the cause of the problem. Should the school include a speech-language therapist in this process?

1. Strongly agree 2. Agree 3. Undecided 4. Disagree 5. Strongly Disagree

QC.6. Ari, age 52, has experienced a stroke. His speech is hard to understand, and he has weakness in the muscles of his face. Should Ari need to be seen by a speech-language therapist?

1. Strongly agree 2. Agree 3. Undecided 4. Disagree 5. Strongly Disagree

QC.7. Please rate your understanding of children's speech and language milestones under the age of four years.

No Understanding 0 1 2 3 4 5 6 7 8 9 10 High Understanding

QC.8. Which of these groups might you expect a speech-language therapist to work with? Please select all that apply.

- People with diseases or injuries affecting the brain
- People with hearing loss
- Adults who stutter
- Children with an autism spectrum disorder
- People with pneumonia
- People with intellectual disability
- People who have their voice box or vocal folds removed and complains of voice problems
- People who have had strokes
- People transitioning between genders

• Adults who lose their eyesight

• People with cleft lip or palate

• People with strained voices

• People with leukaemia

• People with dementia or memory difficulties

• People with muscle diseases

• People with tonsillitis

• People with swallowing difficulties

QC.9. In your understanding, which among the following are the potential causes of 'communication impairments'? (Please select all that apply)

a. Genetic/ family-based

b. Environmental toxins

c. Parenting practices

d. Diseases/ Illnesses

e. Fate/ Karma

f. Neurological differences

g. Injury/ accident (e.g., brain or body)

h. Older Age

i. Increased screen time/gadget exposure

j. Other (please state)

QC.10. If you get an opportunity, would you like to work in the field of speech-language therapy?

a. No, (please state)

b. Yes, (please state)

c. Unsure, (please state)

QC.11. Would you like to work for organisations/institutions that provide services to individuals with communication impairments?

a. No (please state)

b. Yes (please state)

c. Unsure (please state)

QC.12. What support systems do you expect for an individual with communication impairment (e.g., it is very hard to understand what they say) from the wider society? (Please select all that apply)

a. Services from professionals (SLTs, Psychologists, etc.)

b. Assistive devices (e.g., communication boards/ books, text-to-speech devices)

c. Government funding for support services

d. Equal educational/employment opportunities

e. Community support

f. Other (please state)

QC.13. How much do you agree with the below statement?

"Individuals with communication impairments are well-considered and supported in my ethnic group".

1. Strongly agree 2. Agree 3. Undecided 4. Disagree 5. Strongly Disagree

Thank you for taking time to complete this survey.

Please advise if you would like to go in the draw for one of ten $50 gift vouchers.

- No
- Yes, I would like to enter the draw

If you would like me to send you a summary of the study's findings (early 2021), please click below.

- Yes, please send me a copy of the study's findings.
- No, I do not want the copy of the study's findings.

Appendix C: Information Sheet for Participants

Information Sheet for Participants
(To form the first screen of the online survey)

Juhy Paily
School of Psychology, Speech, and Hearing
Telephone: +64 3 369 5090
Email: juhy.paily@pg.canterbury.ac.nz
1 June 2020
HEC Ref: TBC

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Public Awareness of Speech-Language Therapy Services and the Communication Support Needs of New Zealanders

Kia ora, my name is ***Juhy Paily.*** I am a student at the University of Canterbury studying towards a Master of Science in Speech and Language Sciences. This research project aims to explore peoples' awareness of speech-language therapy services and the needs of tamariki/children and adults who experience communication difficulties.

What is involved in taking part?

Taking part in this study involves answering a range of questions. This is estimated to take 8 - 10 minutes. These questions explore your understanding of the work that speech-language therapists do, and what you think and know about the communication needs of tamariki/children and adults.

What happens to the information I provide?

The responses obtained via this online survey will remain anonymous. This means that the research team will not be able to identify participants and will not be able to know who provided what information. All data will be stored in password-protected files on the University of

Canterbury computer databases. Only the researcher and supervisors involved will have access to the information, which will then be destroyed after 5 years.

The survey is being carried out as a requirement of a master's thesis. This will be available to the public via an online repository, through the UC library. In addition, results might be published in an academic journal or presented at a conference.

What is the prize draw?

After completing the survey, you can choose to enter a random prize draw. Ten participants will be chosen at random and each given a $50 gift voucher. This will involve clicking a link which will take you to another survey where you can enter your contact information. These details will be stored separately and will not be able to be linked with your survey responses. You will also be asked if you would like a summary of the research when it is finished. If you choose to, I will email you a summary of the research at the conclusion of the study (early 2021).

Who can participate?

Any individuals who are aged 18 years or above and are currently residing in New Zealand. However, students, current, non-practicing and retired speech-language therapists are not able to be included in the study.

Do I have to participate?

Participation is voluntary and you have the right to withdraw at any stage without any penalty. If at any stage you decide not to proceed, simply close the survey browser window. All data that you have entered up to that point will be deleted. Please note, there are no wrong answers for the questions in the survey. We are interested in your perceptions and knowledge.

If any of the questions cause you to feel upset, offended or stressed, you can either contact the research team or contact a free helpline at www.1737.org.nz (text or call 1737).

Who is doing this research?

If you have any questions about this survey, you can contact;

Researcher: Juhy Paily (juhy.paily@pg.canterbury.ac.nz)
Supervisor: Dr Dean Sutherland (dean.sutherland@canterbury.ac.nz)
Co-Supervisor: Tika Ormond (tika.ormond@canterbury.ac.nz)

This project has been reviewed and approved by the University of Canterbury Human Ethics Committee. If you have any complaints, please email to The Chair, Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch (human-ethics@canterbury.ac.nz).

Appendix D: Study Advertisement

Juhy Paily
School of Psychology, Speech, and Hearing
Telephone: +64 3 369 5090
Email: juhy.paily@pg.canterbury.ac.nz
1 June 2020
HEC Ref: HEC 2020/40

STUDY ADVERTISEMENT

Kia ora, I am ***Juhy Paily*** from the School of Psychology, Speech & Hearing at the University of Canterbury. As a part of my Masters' research project, I am inviting you to take part in a study on: "Public awareness of Speech-language therapy and people who experience communication difficulties". The aim of the study is to find out more about what people know about Speech-language therapy and people who have difficulty communicating.

- Who can take part?

Anyone aged 18 years or over currently living in Aotearoa – New Zealand however, if you are, or have ever worked as, a speech therapy professional, or if you are a speech therapy student, I am not able to include you in the study.

- What is required?

8 to 10 minutes to complete an online survey – see this link <LINK>.

After completing the survey, you can choose to enter a random prize draw. Ten participants will be chosen at random and each given a $50 gift voucher. If you have any questions or would like more information, please contact the primary researcher at <**juhy.paily@pg.canterbury.ac.nz**>.

Ngā mihi nui,

Juhy Paily

MSc Speech and Language Sciences

University of Canterbury