Hand therapists' experiences and perspectives of support in hand therapy training

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Abstract

Hand therapy is a clinical area of practice for occupational therapists (OTs) and physiotherapists (PTs) undertaking rehabilitation of the upper limb. Occupational therapists and PTs start as associate hand therapists (AHTs) and can train over three years to become registered hand therapists. The training combines academic and clinical experience, with most learning occurring through clinical experience in the workplace. However, the structures and supports for AHTs within the workplace are limited, with supervision being the only mandatory support requirement set by Hand Therapy New Zealand. Literature surrounding training for hand therapists is sparse and it is unclear if AHTs receive sufficient support to facilitate their transition to becoming registered hand therapists. The purpose of this research is to explore the experiences and perspectives of hand therapists regarding support received during AHT training. I aimed to discover what support is provided, how support is experienced, and how support could be improved.

An Interpretive Description methodology was employed. Participants (*n*=12) were AHTs and registered hand therapists who had experienced training in Aotearoa. Purposeful sampling allowed for a broad range of perspectives to be gained. These included perspectives from the occupational therapy and physiotherapy professions as well as Māori and Pasifika cultural perspectives. Data were collected by individual interviews completed online, transcribed verbatim, and analysed using reflexive thematic analysis.

Four themes were constructed: 1) Recognising and valuing the diversity of Aotearoa hand therapy, 2) A therapist-centred approach to learning, 3) An accessible community, and 4) Hand therapy - a unified professional identity. These findings indicate that AHTs' experience of support depends on who they are and where they work. Participants suggested that hand therapy structures and supports were dominated by Pākehā and physiotherapy worldviews and appeared to limit the progression of AHTs who fall outside these spaces. Aotearoa hand therapy holds a professional, cultural, and geographically diverse membership that requires individualised and therapist-centred support. Furthermore, this support needs to be accessible and present through all professional and organisational levels.

Establishing support processes that recognise and value the identity of each therapist would allow AHTs to feel safe bringing their whole selves to their practice, to build confidence in their abilities, develop a sense belonging to the community, and become grounded in their positioning as a hand therapist.

Contents

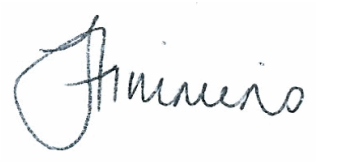
List of figures

List of tables

List of appendices

Attestation of authorship

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.



28/01/2022

Signature Date

Co-authored works

A research summary was disseminated to all participants at the conclusion of the study. The summary highlighted the main findings and clinical implications of the research. A copy of the research summary can be found in Appendix S.

Presentations

Hand Therapy New Zealand conference free paper presentation- September 2021, postponed due to COVID-19 to March 2022.

New Zealand Rehabilitation Association conference oral presentation- September 2021, postponed due to COVID-19 to April 2022.

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Finally, thank you to my parents, especially my mother, Lorraine Spiller and to my husband, Dave. You have supported me in so many ways, encouraging and enabling me to complete this study. Thank you.

Ehara taku toa I te takitahi, engari ke hē toa takitini

My success should not be bestowed onto me alone, it was not individual success but the success of a collective

Ethics approval

Ethical approval was obtained from the Auckland University of Technology Ethics Committee on the 27th of July 2020. Approval code: 20/223. The ethical approval form can be found in Appendix A.

Ethical approval for an amendment was obtained from the Auckland University of Technology Ethics Committee on the 6th of November 2020. Approval code: 20/223. This ethical amendment approval can be found in Appendix B.

Abbreviations

ACC	Accident Compensation Corporation
AHSC	Allied health services contract
AHT	Associate hand therapist
AUT	Auckland University of Technology
AUTEC	Auckland University of Technology Ethics Committee
CHT	Certified hand therapist
CPD	Continuing professional development
DHB	District Health Board
ESP	Extended scope practitioner
HAUL	Hand and Upper Limb
HTSC	Hand therapy services contract
IFSHT	International Federation of Societies for Hand Therapy
MMC	Mātauranga Māori Committee
OT	Occupational therapist
OTBNZ	Occupational Therapy Board of New Zealand
OTNZ-WNA	Occupational Therapy New Zealand- Whakaora Ngangahau Aotearoa
PPA	Pasifika Physiotherapy Association
PSC	Physiotherapy services contract
PT	Physiotherapist
PBNZ	Physiotherapy Board of New Zealand
PNZ	Physiotherapy New Zealand
SIG	Special Interest Group

Transcription guide

… *(pause)*	Indicates a pause in the participant's speech
…	Indicates words removed from the original transcript
[ ]	Indicates words added by the researcher to clarify the meaning of the quote
‘ ‘	Indicates a quotation within the participant's direct quote

Chapter 1 Introduction

This research explores the experiences and perspectives of support in the context of hand therapy training in Aotearoa. Hand therapy in Aotearoa is rehabilitation specific to the distal upper limb, which can be practiced by OTs and PTs during and following hand therapy training. These therapists can become AHTs following registration with Hand Therapy New Zealand (HTNZ) and have up to three years to complete the requirements needed to become a registered hand therapist (Hand Therapy New Zealand, 2018b).

Hand Therapy New Zealand provides three pathways for AHTs to become registered hand therapists. These pathways all require academic learning alongside clinical experience. During the clinical experience undertaken by AHTs, required support is limited to only supervision. Supervision requirements are set by HTNZ for on-site AHTs during their clinical practice and are a minimum of 30 hours annually mandated for the completion of clinical reviews. Supervision for off-site AHTs increases to 56 hours for their first year, and 43 hours in subsequent years (Hand Therapy New Zealand, 2020c). Support in any other form is dependent on the therapist's place of work and their ongoing individual supervision agreements. This situation means the level of support can vary, and the extent to which AHTs feel enabled to develop clinically and professionally is unknown.

In this chapter, I describe hand therapy in Aotearoa and how it has evolved into its own field of practice. I also outline the processes and pathways for becoming a hand therapist, how Aotearoa hand therapy compares internationally, and the funding structures available. I will briefly unpack the concept of support as it is currently operationalised in the Aotearoa context, with some additional context around rural and cultural support.

Associate hand therapists and registered hand therapists are synonymous with associate members of HTNZ and full members of HTNZ, respectively. Within the hand therapy community, the terms 'associate hand therapist' and 'registered hand therapist' are more widely used and will therefore be the key terms used within this thesis. Furthermore, the acronyms OT and PT are widely used within the hand therapy

community to mean both occupational therapist and occupational therapy, and physiotherapist and physiotherapy. However, in this thesis the acronyms of OT and PT will depict the therapist (occupational therapist or physiotherapist) and the professions of occupational therapy and physiotherapy will be typed in full.

1.1 My introduction

I chose this research inquiry based on my own experiences as an AHT, a registered hand therapist, and a supervisor of AHTs. I am a PT and have worked for over ten years as a hand therapist. I completed my AHT training in the District Health Board (DHB) environment with incredible support which I attribute to supportive relationships with my colleagues and a supportive workplace culture they helped create. On leaving the DHB and moving to work in the private sector, I found the support systems that I had thought were universal were not always present. I saw new AHTs, especially those with an occupational therapy background, struggle when starting hand therapy, and I saw that they did not receive the support I had experienced in this private practice environment. When looking to the organisation and professional levels for guidance, I could see the requirements around support for AHTs were insufficient. My experiences and the awareness of limited AHT professional guidelines prompted me to want to explore other peoples' experiences and perspectives of support as an AHT with a view to generating insights that could be formative to supports provided to AHTs in the future.

1.2 Organisation of thesis

The thesis structure consists of five chapters.

- Chapter One presents the background underlying this research, including an introduction to Aotearoa hand therapy with supporting contextual information and an outline of the study aims.
- Chapter Two provides a comprehensive review of the literature through two structured searches and a review of grey literature. The literature surrounding hand therapy support is presented with expansion to include literature on support in the wider allied health, rural and Aotearoa contexts.

- Chapter Three outlines Interpretive Description methodology and its purpose and use in guiding this study. The methods section explains the study design, participants, recruitment, data collections, data analysis, rigour and credibility, and ethics.
- Chapter Four presents the findings through four themes: 1) Recognising and valuing the diversity of Aotearoa hand therapy; 2) A therapist-centred approach to learning; 3) An accessible community; and 4) Hand therapy- a unified professional identity.
- Chapter Five includes a discussion of key findings and synthesises these in relation to the current practice of hand therapy. The clinical implications and potential future research are considered.
- Appendices are referred to throughout the thesis and are found following Chapter Five, the references and glossary section.

1.3 The history of hand therapy

The professional practice of hand therapy started in the 1940s and 1950s (although it was not known as hand therapy at that stage) when military therapists began writing and teaching about the care of the hand (Mackin, 1988). Hand therapy further evolved during the Second World War, as OTs and PTs responded to the rehabilitation needs of injured soldiers. Surgery of the upper limb was advancing during this time. Alongside the surgeons, OTs and PTs enabled greater functional restoration of injured and diseased upper extremities of returning servicemen (Chai et al., 1987; Mackin, 1987; Stanton, 2006). Dr Paul Brand, a pioneering hand surgeon, established the first known hand clinic in Vellore, India, in 1950. In 1966, he moved to the United States of America, where he continued a model of care of working collaboratively with hand therapists (Stanton, 2006). Established in 1977, the American Society of Hand Therapists was the founding association for hand therapists and only seven years following this, in 1984, the New Zealand Association of Hand Therapists (now known as HTNZ) was established (Physiotherapy New Zealand, n.d.-a). These newly formed associations aimed to support members through education, professional development, networking, and representation at regional and national levels.

The definition of hand therapy has been through many adaptations with the current definition, from the Hand Therapy Certification Commission being:

> "Hand therapy is the art and science of rehabilitation of the upper limb, which includes the hand, wrist, elbow, and shoulder girdle. It is a merging of occupational therapy and physical therapy theory and practice that combines comprehensive knowledge of the structure and function of the upper limb with function and activity. Using specialised skills in assessment, planning, and treatment, hand therapists provide therapeutic interventions to prevent dysfunction, restore function, or reverse the progression of pathology of the upper limb to enhance an individual's ability to execute tasks and to participate fully in life situations" (Keller et al., 2021 (article in press)).

1.4 Current history of Aotearoa hand therapy

1.4.1 The current standing of HTNZ

Hand Therapy New Zealand is Aotearoa's only professional association representing hand therapists. The HTNZ membership currently consists of 254 registered members and 112 associate members (Hand Therapy New Zealand, 2021b). Of the 366 total members, 27% hold an occupational therapy undergraduate qualification, and 73% hold a physiotherapy undergraduate qualification (Hand Therapy New Zealand, 2021b). However, the OT membership is growing having increased by 17% since 2014 (International Federation of Societies for Hand Therapy, 2015).

In contrast to lower numbers of OT AHTs in Aotearoa, internationally, the occupational therapy profession is the dominant profession within hand therapy memberships. Keller et al. (2021 (article in press)) have published the most recent practice analysis study, which reports the Certified hand therapist (CHT) population (an internationally recognised hand therapy certification which includes a qualification developed by the American Society of Hand Therapists) consists of 86% OTs, 13% PTs and less than 1% with both undergraduate qualifications. Most CHT respondents were from the United States of America (over 90%), Canada (5%), and Australia (3%), with all other countries (including Aotearoa) making up the final 1%. These figures align with an international survey completed by the International Federation of Societies for Surgery of the Hand completed in 2015 which found 70% of respondent hand therapists were OTs and 30% PTs. Of note, out of 29 countries, Aotearoa was one of only eight countries who

returned results showing a higher proportion of PT hand therapists compared to OT hand therapists (International Federation of Societies for Hand Therapy, 2015).

Hand Therapy New Zealand is internationally recognised through its registration with the International Federation of Societies for Hand Therapy (IFSHT). The IFSHT was founded in 1987 to co-ordinate activities between the various national societies and associations, and to increase and enhance the exchange of hand therapy knowledge. The establishment of the IFSHT was aided through the invitation of hand therapists to participate in the 1980 International Federation of Societies for Surgery of the Hand congress. The first IFSHT congress was held in 1989 in Tel-Aviv, Israel and was attended by delegates from ten countries, including Aotearoa. Aotearoa is now one of 37 countries to hold full membership to the IFSHT (International Federation of Societies for Hand Therapy, 2012).

More recently, the organisational structure of HTNZ came under review. Physiotherapy New Zealand (PNZ) was restructuring and proposed to all Branches and Special Interest Groups (SIGs) (of which HTNZ was a member) to dissolve as Incorporated Societies and become SIGs within PNZ (Physiotherapy New Zealand, 2021b). This proposal saw HTNZ considering its structure and future as a membership of dual professions. However, it was felt by many OTs that to become a SIG of PNZ would be detrimental to OTs through the loss of their voice, less occupational therapy advocacy, and detrimental overall to the future development of hand therapy (Hand Therapy New Zealand, personal communication, August 24, 2020).

Members of HTNZ agreed with this argument and showed significant unity through a membership intention vote held during the HTNZ 2020 Annual General Meeting. The HTNZ membership voted to continue as an Incorporated Society with 150 members voting (a percentage of 45% of the total membership). The OTs and PTs voted separately, with 100% (n=54) of OTs and 87% (n=93) of PTs voting in favour of staying as an Incorporated Society. This result highlighted an intent for the membership to stay united as hand therapists and develop their own strategic direction going forward (Hand Therapy New Zealand, 2020b).

1.4.2 Funding structures for hand therapists in Aotearoa

In Aotearoa, funding for hand therapy primarily comes from the Accident Compensation Corporation (ACC) followed by the Ministry of Health via the DHBs. Additional funding comes via other government agencies, local government, and private sources such as insurance and private payments (Ministry of Health, 2016). Occupational therapists predominantly work within the DHB (49%), with a further 23% working for private providers (Stokes & Dixon, 2018). In comparison, PTs predominantly work in private practices (64%), with 15% working within the DHB (Physiotherapy Board of New Zealand, 2020). These statistics are not specific to hand therapists. However, it is widely recognised that most hand therapists work within private practices (136 private clinics compared to 20 clinics within the DHB listed on the HTNZ website) and are likely to receive their majority funding from the ACC Hand Therapy Services Contract (HTSC) (Hand Therapy New Zealand, n.d.).

The ACC developed the HTSC in 1999 when there were only a few full members of HTNZ. Consequently, ACC recognised a service gap and to ensure a high quality of service provision suggested also offering the contract to AHTs, although with additional requirements. Associate hand therapists needed to be working towards their full registration and be supervised/ mentored by a HTNZ registered hand therapist (Hand Therapy New Zealand, 2020c). Over the past 20 years, the number of registered hand therapists have substantially increased, and the initial service gap recognised in 1999 has reduced considerably. However, it is recognised throughout Aotearoa that some service gaps still exist, so ACC continues to allow AHTs to provide services through the HTSC at the same remuneration rate as a registered hand therapist. Hand Therapy New Zealand argues that providing service delivery contracts before registration enhances recruitment and training of AHTs (Hand Therapy New Zealand, 2020c).

The ACC HTSC is valuable to hand therapists as the remuneration rates are higher than the ACC Physiotherapy Services Contract (PSC) (a contract in which PTs treat musculoskeletal conditions). The ACC provided the separate HTSC contract (from the PSC) with a higher remuneration rate to reflect the unique skills and expertise of hand therapists (Hand Therapy New Zealand, 2020c). The different remuneration rates

between the HTSC and PSC are shown in Table 1. Consequently, it is recognised that there are financial incentives in working under the HTSC.

Table 1.

Accident Compensation Corporation remuneration rates for the hand therapy services contract and physiotherapy services contract

Service	Hand Therapy Services Contract	Physiotherapy Services Contract
Initial consultation	$86.98	$51.74
Follow up consultation	$65.55	$38.80
Additional splinting per patient	$300	$100 (moon boot/ knee brace)

Barriers to funding

The funding from ACC, however, does not apply equally to OT hand therapists as unlike their PT counterparts, they are unable to independently submit initial consultations, known as ACC45s under the HTSC (Hand Therapy New Zealand, 2020a). The ACC has recognised this limitation for OT hand therapists and approved a 'workaround approach' in which OTs can submit an ACC45 following its review by a PT hand therapist (Hand Therapy New Zealand, 2021a). Although this provides OTs with some additional service provision, they are still reliant on their PT colleagues to submit an ACC45 and therefore there is still inequity between the two professional groups. Furthermore, some health insurance companies have followed ACC policies and placed similar restrictions on funding treatment by OT hand therapists, which are not in place for PT hand therapists (Hand Therapy New Zealand, 2018a).

In November 2021, ACC released a new combined contract. This contract aligns all existing allied health contracts, including the PSC and HTSC under the Allied Health Services Contract (AHSC). The alignment ensures consistent quality service measures are in place across all allied health providers. Currently, no changes will occur to hand therapy registration requirements or hand therapy remuneration payments (Physiotherapy New Zealand, 2021a). Data collected for this thesis were done so prior to the AHSC being instated. Although participants were aware of the planned ACC contract changes, they were not yet practising under these changes.

1.4.3 Coronavirus impact on Aotearoa hand therapy

My thesis was undertaken during the 2020-2021 Coronavirus pandemic. The coronavirus pandemic officially arrived in Aotearoa in February 2020. By March 25, 2020, Aotearoa was in a full lockdown, and some (particularly private and primary care) occupational therapy and physiotherapy services were placed on non-essential work lists. During the lockdown, many occupational therapy and physiotherapy services were only available to patients via telehealth (New Zealand Government, 2020; Physiotherapy Board of New Zealand, 2021).

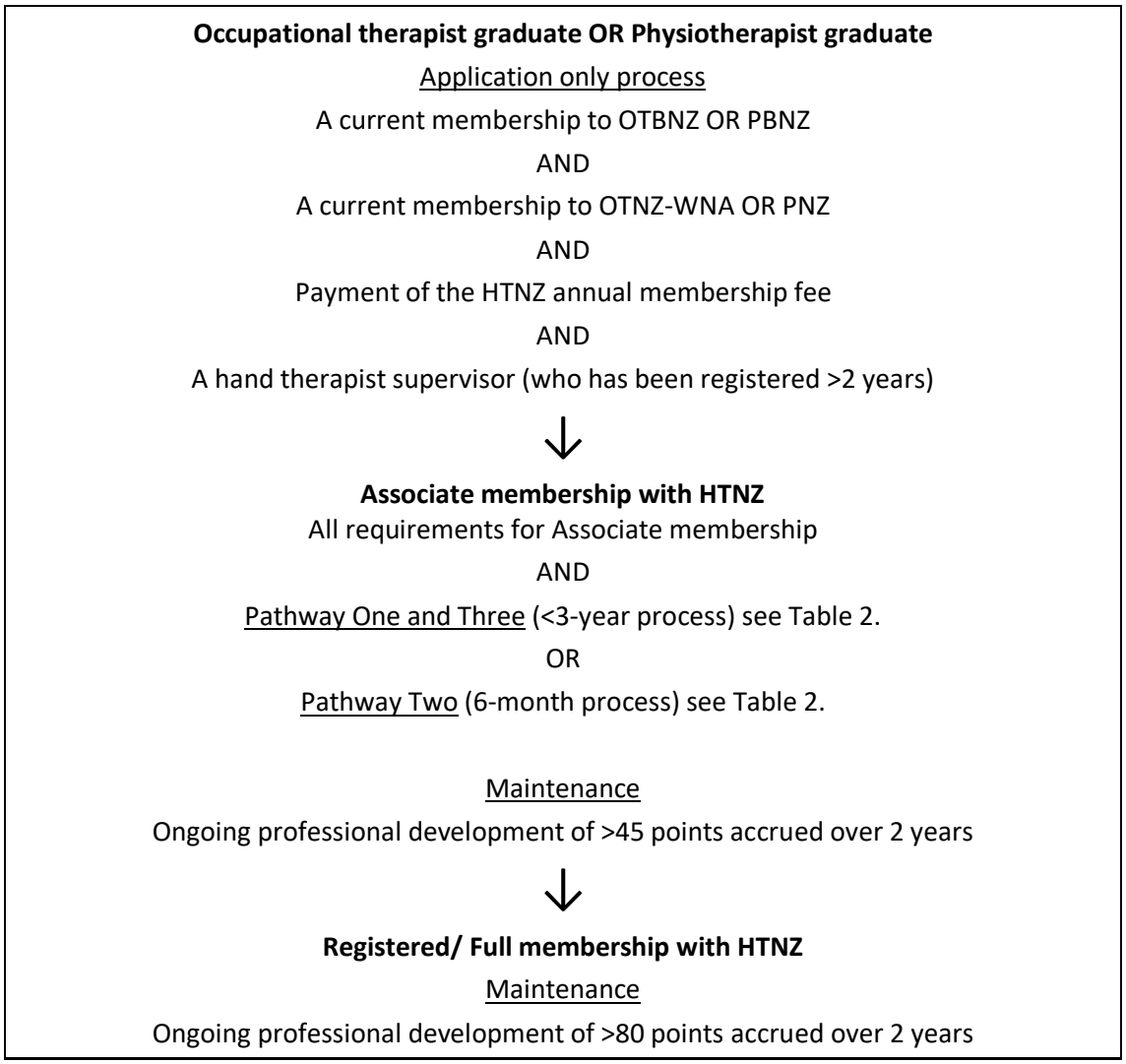
During this time (March-April 2020), HTNZ received advocacy from Aotearoa hand surgeons and worked collaboratively with PNZ to negotiate equal remuneration payments for in-person and telehealth consultations. This change was eventually achieved, so that hand therapists and other allied health practitioners received remuneration payments of equal value regardless of the patient having an in-person or telehealth consultation (Hand Therapy New Zealand, 2020a).

1.5 Hand Therapy New Zealand registration requirements

Hand Therapy New Zealand welcomes membership from any OT or PT interested in hand therapy. However, to hold or work under the ACC HTSC, a therapist is required to register as either an associate or registered hand therapist and complete the requirements laid out by both HTNZ and ACC. The HTNZ membership process is outlined in Figure 1.

Figure 1.

Hand Therapy New Zealand membership process



Note. HTNZ = Hand Therapy New Zealand; OTBNZ= Occupational Therapy Board of New Zealand; OTNZ-WNA = Occupational Therapy New Zealand- Whakaora Ngangahau Aotearoa; PBNZ = Physiotherapy Board of New Zealand; PNZ = Physiotherapy New Zealand. Pathways One, Two, and Three are outlined further in Table 2.

1.5.1 Becoming an associate member of Hand Therapy New Zealand

Associate membership with HTNZ requires registered OTs and PTs to hold a membership with their professional board, the Occupational Therapy Board of New Zealand (OTBNZ) or the Physiotherapy Board of New Zealand (PBNZ) and belong to their respective parent body, Occupational Therapy New Zealand-Whakaora Ngangahau Aotearoa (OTNZ-WNA), or PNZ. Associate membership also requires an annual subscription fee and ongoing professional development of 45 points accrued over a two-year period (Hand Therapy New Zealand, 2018b). Professional

development points are accrued through seven categories: courses and conferences; publication, writing, research; work-based; teaching and presenting; professional activity; self-directed learning; and other activities relevant to hand therapy. Outside of coronavirus restrictions there is the requirement to gain points from at least three of the categories (Hand Therapy New Zealand, 2019b).

Associate hand therapists can stay on the HTNZ associate membership indefinitely while ensuring they maintain their professional body and parent body memberships, their professional development activities and that they pay the HTNZ annual membership fee. However, if an associate member chooses to work under the ACC HTSC, they must meet additional registration requirements. Accident Compensation Corporation guidelines state that AHTs must have a supervision agreement with a full member of HTNZ who has been registered for two or more years, and that they complete their registration as a full member of HTNZ within three years of starting as a Named Provider (Accident Compensation Corporation, 2019). This position is further explained in section 1.6.1 Supervision.

Hand therapists can work under the ACC HTSC as Named Providers (hand therapists) or Suppliers (persons or companies who hold the ACC HTSC and accreditation certificate), allowing them to both provide and be paid for hand therapy services delivered to clients whose rehabilitation is funded via ACC (Accident Compensation Corporation, 2018). Additionally, to provide services under the ACC HTSC, Suppliers must ensure they have at least one Named Provider who is a registered hand therapist (Accident Compensation Corporation, 2019).

Associate hand therapists can also contract as a sole Named Provider (known as an ‘off-site’ associate). This arrangement means they are both the Named Provider and Supplier and can provide services through the ACC HTSC without having a full member of HTNZ also on their contract. However, an off-site AHT needs to meet further requirements. They must meet all the components of a full member of HTNZ registration (see Table 2), except for the clinical hours component. For the clinical hours component they must be working towards completing the 1800 clinical hours required and have at least six months of hand therapy experience within the past five years (Accident Compensation Corporation, 2018; Hand Therapy New Zealand, 2020c).

The ability to work as an off-site AHT is due to a service gap mostly seen in rural areas of Aotearoa. The final approval of an off-site AHT for the ACC HTSC is through ACC themselves (Accident Compensation Corporation, 2018).

1.5.2 Becoming a registered hand therapist (full member of Hand Therapy New Zealand)

As noted earlier, HTNZ provides three pathways for AHT to register as full members (Hand Therapy New Zealand, 2018b). Table 2 shows the pathways for HTNZ full membership registration. Full membership registration requires meeting the associate membership criteria and the specific pathway criteria presented.

Table 2.

Hand Therapy New Zealand full membership requirements

HTNZ full membership entry requirements All requirements for an associate HTNZ membership, plus:	Pathway One	Pathway Two	Pathway Three
Evidence of 1800 clinical hours in hand and upper limb conditions within three years (70% of cases should include the forearm and hand)	✓		✓
Complete a HTNZ approved hand therapy training program within the last five years. Current approved program is the Hand and Upper Limb (HAUL) module provided through the Auckland University of Technology	✓		✓
Complete a written case presentation	✓		
Complete an additional 15 credit paper (postgraduate level) relevant to hand therapy practice within the last five years			✓
Complete an approved static and dynamic splinting course	✓		✓
A letter of recommendation from a full member of HTNZ or New Zealand hand surgeon	✓	✓	✓
Documentation of formal regular supervision	✓		✓
Two peer reviews by an independent full member of HTNZ who does not work in the same organisation as you or your supervisor	✓		✓
Current membership of an overseas hand therapy association with equivalent entry requirements as HTNZ, or CHT qualification		✓	
Curriculum Vitae		✓	

Note. CHT = Certified hand therapist; HTNZ = Hand Therapy New Zealand

Pathway One and Pathway Three have similar requirements. The only differing component is Pathway One requires a case study and Pathway Three requires an additional postgraduate level 15-point credit paper relevant to hand therapy practice. Pathway Two is recommended for hand therapists who already hold a current membership with an overseas hand therapy association with equivalent entry requirements to HTNZ (Hand Therapy New Zealand, 2018b).

A current requirement for full membership to HTNZ via Pathway One or Three is evidence of completing 1800 clinical hours over three years. Kasch et al. (2003) report that following commencement in hand therapy training, the unique skills required for work as a hand therapist was generally met by their second year of practice. However, the 1800 hours required in Aotearoa can theoretically be completed within one year of working full-time (40 hours per week). In comparison, the Australian Hand Therapy Association requires a minimum of three years postgraduate experience and 3600 hours for their full member registration (accredited hand therapist) (Australian Hand Therapy Association, n.d.). Furthermore, the American Society of Hand Therapists require a minimum of three years as a registered OT or PT and 4000 hours of direct hand therapy practice, for registration as a CHT (Keller et al., 2016). The Aotearoa clinical hour requirements are low compared to equivalent international standards and research and do not include clinical experience before starting as an associate hand therapist, as seen in the CHT registration. Hand Therapy New Zealand are looking at further aligning their registration processes with international hand therapy associations, including increasing the clinical hour requirements (Hand Therapy New Zealand, 2019a).

The current HTNZ-approved hand therapy training program is the Hand and Upper Limb (HAUL) paper offered at the Auckland University of Technology (AUT). This postgraduate training program was developed following discussions between HTNZ members and AUT and started as an approved course in 2006. Before this, an annual hand therapy training program was organised and delivered by founding HTNZ members to ensure baseline knowledge was obtained (Hand Therapy New Zealand, 2016; Physiotherapy New Zealand, n.d.-b). Auckland University of Technology recommends students have a minimum of two years postgraduate experience in physical rehabilitation and a sound working knowledge in upper limb anatomy prior to

undertaking the HAUL paper (Auckland University of Technology, 2021). This recommendation is somewhat consistent with Kasch et al. (2003), who reported that hand therapy competencies develop from a basic platform knowledge and skillset founded on prior work in general practice as an OT or PT over five years. However, AUT only provides a recommendation for two years prior clinical experience, and HTNZ does not provide requirements for previous experience needed before an OT or PT becomes an AHT. Therefore, AHTs can technically start hand therapy directly after their undergraduate degree.

1.6 Support for training hand therapists

The concept of support is not clearly defined in the literature; instead, research refers to activities therapists use and need to support them in their career development (Bell et al., 2014; Steenbergen & Mackenzie, 2004). Supervision is the only mandatory training support within the AHT journey outside of the professional education requirements.

1.6.1 Supervision

Supervision is a mandatory and essential component of registration for all HTNZ associate members. The HTNZ supervision guidelines state supervision is "a process facilitating mentorship which enables an associate to develop skills and knowledge in the advanced field of hand therapy" (Hand Therapy New Zealand, 2020c, p. 4). Associate members working towards their full membership must have a supervisor who has been a full member of HTNZ for at least two years. The minimum supervision requirements include reviews and audits of clinical notes (two cases reviewed and audited from notes biannually), clinical observation and peer review (minimum of two annually), and more general supervision, such as answering enquiries and providing feedback and support. Off-site AHTs have the additional requirement of a quarterly review of their case log; a record of presenting conditions and treatment plans (Hand Therapy New Zealand, 2020c). Hand Therapy New Zealand estimate that 30 hours per year is required to effectively complete supervision. The first year of associate membership supervision should consist of at least one individual 30-minute weekly or session or a 1-hour fortnightly session. Supervision in consecutive years requires a

minimum of one hour per month, or half an hour per fortnight (Hand Therapy New Zealand, 2020c).

The supervisor's role is to provide supervision and mentorship, conduct the clinical review and ensure associate members meet the ACC HTSC standards. The supervisor must review the supervision agreement after 30 months to ensure the associate member is on track to achieving full membership within the three years. There are no ongoing direct supervision requirements for full members of HTNZ.

1.6.2 Rural support

Approximately 16% of Aotearoa's population live rurally (Statistics New Zealand, 2019). The OTBNZ and PBNZ report only a small number of OTs (no percentages given) and only 3% of PTs work in rural regions. A lack of support, including supervision, is recognised for rurally based therapists who predominately work independently (Physiotherapy Board of New Zealand, 2018a; Stokes & Dixon, 2018). Rural support is difficult to access and is a known factor influencing retention of rural PTs (Physiotherapy New Zealand, 2021, February).

Hand Therapy New Zealand does not hold statistics describing the number of rural hand therapists within their membership. However, HTNZ have noted that rurally based OTs and PTs are struggling to find experienced hand therapist supervisors to allow them to register as AHTs and work towards their full memberships (Hand Therapy New Zealand, 2021b). ACC also recognises the difficulties rural therapists and practices have in meeting HTNZ registration requirements and continue to support contracts for off-site AHTs (Hand Therapy New Zealand, 2020c).

1.6.3 Cultural support

Cultural support is an integral aspect of support for health practitioners in Aotearoa. All health practitioners in Aotearoa are responsible for improving the health outcomes of Māori people through honoring Te Tiriti o Waitangi. The Treaty of Waitangi Act 1975 and amendments in 1985 require statutory bodies and government departments to undertake activities consistent with Te Tiriti. In particular, article three guarantees that Māori share equally in the benefits of modern society, including: equal standards of health care, equity of access to health care, and general equity of health outcomes

(Harwood, 2010; Papps & Ramsden, 1996). Alongside Māori, Pasifika also require improved health outcomes as they too experience significant inequities in health compared to non-Māori (Statistics New Zealand & Ministry of Pacific Island Affairs, 2011). The term Pasifika is used in this study as it encompasses the cultural and linguistic diversity of Pacific groups including Samoa, Tonga, Cook Islands, Niue, Tokelau, Tuvalu, and other smaller Pacific nations, who are now residing in Aotearoa (Ministry of Education, n.d.).

Health inequities for Māori are recognised within Aotearoa. Māori are over-represented in almost every type of illness and every known determinant that leads to poor health (Health Quality & Safety Commission New Zealand, 2019). Māori also undertake rehabilitation for injuries less frequently which can cause higher burden of injury and related health loss (Wren, 2015). The reasons for the health inequities are complex, but include the low workforce representation of both Māori and Pasifika and the lack of cultural safety exhibited by Aotearoa health practitioners (Physiotherapy New Zealand, 2018, December).

In Aotearoa, 17% of the population identify as Māori, and 8% identify as Pasifika (Statistics New Zealand, 2018). The Māori health workforce is underrepresented, with Māori making up 4% of all registered OTs and 5% of all registered PTs (Physiotherapy Board of New Zealand, 2020; Stokes & Dixon, 2018). Pasifika are severely underrepresented, making up 2% of the occupational therapy workforce and 1% of the physiotherapy workforce (Physiotherapy Board of New Zealand, 2020; Stokes & Dixon, 2018). There are no statistics published or kept by HTNZ on the ethnicity of members. However, the statistics from both the OTBNZ and PBNZ indicate a significant underrepresentation compared to national figures, with the workforce not matching the population that the profession represents (Physiotherapy Board of New Zealand, 2020; Stokes & Dixon, 2018).

Both the OTBNZ and the PBNZ recognise the importance of better cultural representation within their professions (Physiotherapy Board of New Zealand, 2020; Stokes & Dixon, 2018). They recognise that a culturally responsive workforce is a key enabler to increasing access and improving health outcomes for Māori and Pasifika and a vital component for this is to have a workforce with appropriate Māori and Pasifika

ethnicity (Pacific perspectives, 2013). Increasing the number of Māori health professionals improves the service that Māori patients receive and has led to positive changes in the cultural landscape of the health sector (Physiotherapy New Zealand, 2018, December). Furthermore, Pasifika health providers successfully improve access to primary health care for Pasifika by delivering health services that are culturally responsive to Pasifika families and communities (Pulotu-Endemann & Faleafa, 2017). Therefore, it is essential to understand and provide cultural support for hand therapists to better care for Māori and Pasifika patients.

1.7 Conclusion

Hand therapists in Aotearoa are provided registration requirements and pathway structures through HTNZ. However, besides formal education and some supervision, further training and or supports are not mandatory. When compared to equivalent international hand therapy associations, Aotearoa has lower registration requirements meaning novice therapists can advance through the process comparatively faster.

Furthermore, hand therapy in Aotearoa is unique in that it encompasses two professional groups and delivers services to a culturally diverse population in which the health equity of Māori and Pasifika is critical. There are discrepancies in the training and support AHTs receive, depending on the undergraduate qualification and clinical experience the therapist attained. Consequently, we are unaware of the support that would best benefit our AHTs. Chapter Two will explore the literature surrounding hand therapy support, OT and PT experiences of support, the experiences of support for rurally based therapists, and experiences of cultural support for Aotearoa therapists.

Chapter 2 Literature review

This chapter presents a narrative review undertaken to explore literature about AHTs' experiences of support while training in Aotearoa and identify gaps in the existing knowledge base. A narrative literature review allows an interpretation and critique of a broad range of literature, contributing to a deeper understanding of the research topic and questions (Greenhalgh et al., 2018).

An Interpretive Description methodology lends itself to a literature review that "grounds the study within the existing knowledge, offers critical reflection on what exists and what does not, and offers interpretive commentary on the strengths and weaknesses within the overall body of knowledge" (Thorne, 2008, p. 57). Furthermore, the Interpretive Description methodology suggests immersion and an extensive search across the literature, allowing a more comprehensive understanding of the field of inquiry and a thorough grasp of its history and trajectory. This process allows a coherent scholarship to be built and provides the ability to align research questions to the clinical environment (Thorne, 2016).

2.1 Literature review search methods

Two structured searches were undertaken in November 2020. The initial search explored published literature, both in Aotearoa and internationally. The second was an extended search of existing literature to seek a wider range of relevant information and ensure a solid grasp of the overall evidence. Further to the structured searches, a grey literature review was undertaken. The review of grey literature in clinically-based research allows a more comprehensive understanding of the field of study (Thorne, 2016).

2.1.1 Initial structured literature search

Table 3 shows the search terms and databases searched: CINAHL Complete, MEDLINE, and Scopus. The search terms and keywords used were "hand therap*" AND (support* OR mentor* OR peer OR coach* OR supervis* OR "professional support" OR "professional development"). The "*" truncation symbol was added to the end of root words to instruct the database to search for all forms of the word. Search terms that commonly relate to support (e.g. mentor, peer, coach, supervisor, professional

support, professional development), as seen within hand therapy practice and in health related literature (Moran et al., 2014) were used alongside 'support'. This extended the search field to gain a deeper understanding of the published literature on the topic of support. Articles were limited to full-text and English language only. To build a broader review and richer understanding of the literature no limitations were placed on searches regarding time (year of publication), journals in the hand therapy field, research method, or critically reviewed literature (Thorne, 2016).

Table 3.

Initial structured literature search

Database	Search terms/ Keywords	Limits/refiners	Results	Additional refiner	Results	Articles reviewed
MEDLINE	"hand therap*" AND (support* or mentor* or peer or coach* or supervis* or "professional support" or "professional development")	Articles available in English, full text available	153	Removal of search term "support"	41	3
Scopus	"hand therap*" AND (support* or mentor* or peer or coach* or supervis* or "professional support" or "professional development")	Articles available in English, full text available	199	Removal of search term "support"	52	6
CINAHL complete	"hand therap*" AND (support* or mentor* or peer or coach* or supervis* or "professional support" or "professional development")	Articles available in English, full text available	148	Removal of search term "support"	37	6
Database search articles (for full review)						15(7)
Journal of Hand Therapy articles						5
Total number of articles identified for full review						**12**

Note. The "*" truncation symbol was added to the end of root words to instruct the database to search for all forms of the word.

This search identified 500 articles. The term “support*” was removed to refine the search and remove numerous irrelevant articles. This refined search resulted in 130 articles across three databases, 75 articles once duplicates were removed. The titles and abstracts (where appropriate) were reviewed for relevance and resulted in 15 articles being retained. All retained articles were read in full and reference lists were reviewed to detect articles that may relate to the research questions, regularly cited articles, and authors foundational to the field (Thorne, 2016). A manual search of the Journal of Hand Therapy articles between the years 2016 and 2020, and articles in press (articles accepted for publication in a future issue and available in full-text) was also undertaken to identify additional relevant articles that may have been missed during the database search. The Journal of Hand Therapy was included as it is recognised internationally as a reputable leading journal on upper limb rehabilitation, and is informative to hand therapy practice (MacDermid, 2015). This search identified a further five articles, which were reviewed in full, giving a total of 20 articles. Eight of the overall 20 articles were excluded as they did not relate directly to the research questions in that there was no relevant information on the experiences or perspectives of support in hand therapy training (Colditz, 2011; Dimick et al., 2009; Kasch et al., 2003; Keller et al., 2016; Kurtz, 2009; MacDermid, 2015; Michlovitz, 2009; Muenzen et al., 2002). To ensure the overall evidence was inclusive of a wide range of relevant information, an extended search of the literature was sought.

2.1.2 Second structured literature search

A second database search was undertaken with additions to the original search terms. The additional search terms ‘occupational therapy’ and ‘physiotherapy’ and derivatives of these were included alongside hand therapy. Specific terms were also included to aid in finding more information on areas of support specifically relevant to Aotearoa hand therapists. These included: rural, remote, isolated, small town, cultural, Māori, Pacific, Pasifika, Aotearoa, NZ, and New Zealand. Databases searched included MEDLINE, Scopus and CINAHL complete databases. Articles were again limited to full text and English language, and no year limits were applied. Table 4 provides an overview of the second structured literature search.

Table 4.

Second structured literature search

Database	Search terms/ Keywords	Limits/refiners	Results
MEDLINE	("hand therap*" or "occupational therap*"or OT or physiotherap* or PT) AND (support* or mentor* or peer or coach* or supervis* or "professional support" or "professional development") AND (rural or remote or isolated or "small town" or cultural or Māori or Pacific or Pasifika) AND (Aotearoa or NZ or New Zealand)	Articles available in English, full text available	82
Scopus	("hand therap*" or "occupational therap*"or OT or physiotherap* or PT) AND (support* or mentor* or peer or coach* or supervis* or "professional support" or "professional development") AND (rural or remote or isolated or "small town" or cultural or Māori or Pacific or Pasifika) AND (Aotearoa or NZ or New Zealand)	Articles available in English, full text available	30
CINAHL complete	("hand therap*" or "occupational therap*"or OT or physiotherap* or PT) AND (support* or mentor* or peer or coach* or supervis* or "professional support" or "professional development") AND (rural or remote or isolated or "small town" or cultural or Māori or Pacific or Pasifika) AND (Aotearoa or NZ or New Zealand)	Articles available in English, full text available	19
Database search articles (minus duplicates), for full review			131 (102), 2
Google Scholar articles			9
Total number of articles identified for full review			**11**

Note. The "*" truncation symbol was added to the end of root words to instruct the database to search for all forms of the word.

This search identified 131 articles, with 102 articles once duplicates were removed. The titles and abstracts were reviewed for relevance, and this resulted in five articles being retained. One further article (O'Brien & Hardman, 2014) was not retained as it had already been included in the primary literature review. All articles were read in full and where appropriate references were reviewed to identify further potential articles that may relate to the research questions. Three of the five articles reviewed in full were excluded as they did not relate directly to the research questions or provide

relevant information on practice support for OTs and PTs in Aotearoa (Gat & Ratzon, 2014; Gray & McPherson, 2005; Newton Scanlan et al., 2015).

Google Scholar was also used as a database for this search. Formal searches through Google Scholar produced numerous articles which could not be effectively screened and therefore individualised searches and screening using combinations and further derivatives of the search terms were used. Furthermore, authors relevant to the field were also searched for contributions of interest. This search provided a further nine articles, resulting in 11 included articles overall.

2.1.3 Grey literature review

Further to the structured literature searches, it was felt that a wider range of relevant information than was available in published literature was required to ensure a solid grasp of the overall concept was obtained. Hence, a search of relevant grey literature including articles from magazines such as OT Insight and Physio Matters, and international hand therapy newsletters was undertaken. Furthermore, manual searches were undertaken of the HTNZ, American Society of Hand Therapists, OTBNZ, PBNZ, OTNZ-WNA, PNZ, and ACC websites for related literature or policy aspects which could enable a deeper understanding and grasp of the state of hand therapy support (Thorne, 2016). In particular, annual reports and meeting minutes were reviewed from HTNZ, OTNZ-WNA and PNZ. The HTNZ member Facebook group was also searched as members were often able to clarify information or relay history from memory that is not recorded officially through documentation. Information gained through the grey literature searches provided further insights and knowledge to form a more complete view on hand therapy support.

2.1.4 Data extraction and synthesis

Data was independently extracted and entered into tables to standardise the data extraction process. Data were extracted on study aims, publication year, methodologies, methods, sample size, patient characteristics and geography and all outcomes and analyses relevant to the research questions. Reference to the Critical Appraisal Skills Programme checklist for critique of qualitative research and attention to foundational methodologies was then applied to critically review each included

paper (Critical Appraisal Skills Programme, 2018). These data and critique can be found within Table 5.

A narrative synthesis was used to look across papers and findings (Madden et al., 2018). A summary of the findings presented key conceptual components across all studies with an initial focus on findings most closely related to the research questions. Discussion with my supervisors continued throughout this process to ensure a coherent account of the literature was presented.

2.2 Literature review findings

Table 5 presents a summary of 23 articles identified in the initial structured and second structured literature search.

Table 5.

Summary of articles relating to hand therapists' experiences and perspectives of support in hand therapy training (from primary and secondary structured searches)

Authors	Research questions/ Purpose	Methodology/ Methods/ Tools	Participants	Strengths and limitations
Atkinson & McElroy, 2016	Examine perceptions of preparedness in clinical and non-clinical areas of practice Identify supports influencing novice PT preparedness for work in private practice	Qualitative (Interpretive Description), Interviews	*N*=6 PTs- new-graduates (Australia)	• Participant perceptions including support for new practice is clearly examined • There is a methodological approach of Interpretive Description with semi-structured interviews. Rigour and trustworthiness were clearly shown • The study is limited to PTs perceptions of competency in new practice and supports within new practice and relates to an Australian population
Clark et al., 2013	Explore the perceptions of near-misses and mistakes among new graduate OTs from Australia and Aotearoa, and their knowledge of the current incident reporting systems	Qualitative, Survey	*N*=228 OTs- 3 of which were hand therapists (Australia, Aotearoa)	• The study surveys new-graduate OTs (including 3 hand therapists) experiences of near-misses/ mistakes in their first year of practice and includes workplace supervision. Aotearoa participants are included in the study • There are limitations in gaining deeper understandings in the findings as most questions were 'yes' or 'no', and only three questions were open-ended • Statistical analysis was used for most of the survey findings, with content analysis used for the three open-ended questions

Authors	Research questions/ Purpose	Methodology/ Methods/ Tools	Participants	Strengths and limitations
Davys & Beddoe, 2009	Explore the effects of interprofessional clinical supervision on participants' experience of learning	Mixed methods, Questionnaire, Interviews	*N*=59 Questionnaire *N*=12 Interview Nurses (3), PTs (3), Speech Language Therapists (2), Social Worker (1), University lecturer (1), Dietitian (1), Medical practitioner (1) (Aotearoa)	• The study's main purpose was in seeking participant experiences • A mixed method design was employed to develop interview questions from a questionnaire and then to conduct the interviews • Thematic analysis was used with findings presented from the interviews • The research is based in Aotearoa • The study was limited to participants who had been a part of an interprofessional supervision education program with partial diversity. There were no hand therapists in the study
Dawson & Ghazi, 2004	Explore the experiences of PT ESPs in orthopaedic outpatient clinics	Qualitative, Case study	*N*=4 PTs (United Kingdom)	• The methodology was clear and sampling method stated e.g., case study, purposive sampling • The study examined PTs feelings and perceptions of the ESP role • The study was limited to PTs in the ESP role within Scotland

Authors	Research questions/ Purpose	Methodology/ Methods/ Tools	Participants	Strengths and limitations
Ellis & Kersten, 2001	Identify number, scope, and training experiences of hand therapists working as ESPs in the United Kingdom	Qualitative, Survey	*N*=32 ESP hand therapists (United Kingdom)	• There were good descriptions of sampling methods used with a difficult to reach population • The study was limited in its richness of experiences by the questionnaire method used • Participants were limited to the United Kingdom
Ellis & Kersten, 2002	Doctors' views on the nature of the hand therapist ESP role and service, facilitating and constraining factors to this development, and the required qualifications, training, and supervision	Qualitative, Survey	*N*=17 Consultant hand surgeons (United Kingdom)	• This study used a large sample from a small population group • There was difficulty in drawing conclusions due to the broad experiences and perspectives gained • Findings were based on United Kingdom doctors' experiences and perceptions

Authors	Research questions/ Purpose	Methodology/ Methods/ Tools	Participants	Strengths and limitations
Ellis et al., 2005	Develop a consensus of the role parameters and required knowledge, training, and competencies desirable for the ESP hand therapist role	Qualitative, Survey	*N*=21 Specialist hand therapists (4) Hand therapy educators (2) ESP hand therapists (9) Consultant doctors (4) Patient (1) BAHT research and development officer (1) (United Kingdom)	• There was a good description of the method and justification of how it was used • A diverse range of participants were involved, and they reviewed the findings • Clinical implications were provided • Participants were from the United Kingdom
Hall & Cox, 2009	Investigate the experiences of PTs engaged in clinical supervision	Qualitative, Interviews	*N*=8 PTs (United Kingdom)	• The analysis demonstrated rigour and trustworthiness • The sample was limited to a single physiotherapy department in the United Kingdom

Authors	Research questions/ Purpose	Methodology/ Methods/ Tools	Participants	Strengths and limitations
Holder et al., 2020	Explore the experiences and perspectives of PTs working in private practice in Aotearoa regarding their engagement in professional supervision	Qualitative descriptive, Interviews	*N*=8 PTs (Aotearoa)	• Interpretive description methodology was used with clear recruitment, sampling, and data collection methods • Participants were a diverse group. However, they all worked in one area, Auckland, Aotearoa • The study was limited to PT experiences and perspectives of supervision and did not expand on physiotherapy areas of work to see if any worked within hand therapy
Kingston et al., 2015	Patient perspectives of receiving hand rehabilitation rurally	Interpretive Phenomenology, Semi-structured interviews	*N*=15 Hand trauma patients (Australia)	• Interpretive Phenomenological methodology was used allowing a rich description of experiences • An inductive data analysis approach was used which aligned with the Interpretive Phenomenological methodology • The study was limited to participants who were patients, rather than hand therapists and they were from one population group i.e., rural Australia
Moores & Fitzgerald, 2017	Explore what would assist new graduate OTs to transition from student to practitioner	Qualitative, Narrative Review	N/A	• A narrative review of the literature was presented which focused on evidence-based research • Full detail of search methods was not provided • The study was limited to support for OT new-graduate transition participants only

Authors	Research questions/ Purpose	Methodology/ Methods/ Tools	Participants	Strengths and limitations
Nayar et al., 2013	Examine the strengths and weaknesses of Aotearoa new graduate OTs in practice, from multiple perspectives	Qualitative, Mixed methods	*N*=458 OTs (Aotearoa)	• Mixed methods, online survey and focus groups with clear methods of recruitment, sampling, and data collection was presented • A broad diversity of participants was gained, and attention was given to access, having focus groups throughout Aotearoa • Research was limited to experiences of new-graduate competency for OTs
O'Brien & Hardman, 2014	Explore hand therapists' experiences of building therapy skills in a developing country	Qualitative design (phenomenology and grounded theory), Focus groups	*N*=9 Qualified hand therapists-OTs (Australia)	• A focus group with semi-structured interview questions was used which aligned with the added intention of gaining insights from participant interactions • The study was limited to Australian participants and findings were based on a program to improve hand therapist development when working in one specific place e.g., Bangladesh
O'Brien et al., 2015	Participant experiences of an online train-the-trainer program for developing countries	Explanatory case study, Survey, Focus group, Document analysis	*N*=5 OTs and PTs with current patient caseloads including hand/ upper limb conditions (Australia)	• The case study design was an appropriate methodology • Recommendations were provided for delivery of online courses in developing countries • Participants were Bangladeshi hand therapists and findings were limited to experiences and perspectives of an online course

Authors	Research questions/ Purpose	Methodology/ Methods/ Tools	Participants	Strengths and limitations
Redpath et al., 2015	Explore PTs views on the structure and content of an effective staff supervision program	Qualitative, Focus groups	*N*=52 PTs and PT assistants (Australia)	• Clear and detailed focus group design and emergent data analysis was used • The study focused on experiences of support through supervision only • Participants were limited to Australian PTs
Short et al., 2018	CHT perspectives of barriers to accepting students to clinical rotations CHT perspectives of ideal student knowledge, skill set, and experience before beginning a clinical rotation	Qualitative descriptive, Survey	*N*=2080 (94% United States of America, 6% International)	• The survey design was suitable at gaining broad responses, including internationally • Questionnaire and analysis focused on American hand therapy training procedures (rather than considering international perspectives) • Aotearoa perspectives included, but limited to <1% of sample size
Short et al., 2020	Hand therapy educator perceptions of inclusion of hand therapy content in occupational therapy undergraduate programs	Mixed methods, Survey, Interviews	*N*=43 Hand therapy educators (6 with CHT credentials) (United States of America)	• There was a clear purpose and clear aims based on the literature findings • A diverse range of perspectives surrounding the phenomenon were gained • The qualitative analysis provided more practical clinical-based understandings than the quantitative analysis
Stanhope et al., 2012	Exploring PT ESP roles in orthopaedic outpatients	Qualitative, Systematic review	N/A	• The study was a systematic review that presented clear detail on search the methods • The study was limited to ESP evidence which is not directly compatible in Aotearoa

Authors	Research questions/ Purpose	Methodology/ Methods/ Tools	Participants	Strengths and limitations
Stanton, 2006	Address the ASHT regarding the importance of mentoring and collaboration in bettering hand therapists	Expert opinion	*N*=1 (United States of America)	• There was good expert opinion highlighting relevant issues facing the current and future development of hand therapists • Insights from one person limits the rigour and trustworthiness of the paper
Tryssenaar & Perkins, 2001	Explore the lived experience of rehabilitation students during their final placement and first year of practice	Qualitative	*N*=6 OTs and PTs (Canada)	• The Phenomenological methodology supported the aim to find the lived experience of OTs and PTs during their transition from student to practice • Data were collected through journal entries and clear processes were provided on the data analysis • Participant training was limited to Canada. Detail on work area once starting practice was not specified
Valdes et al., 2021	CHT perspectives on being or not being members of the ASHT	Mixed methods, Survey	*N*=1271 CHT (United States of America)	• The survey method included a large sample size, however there were limited open-ended questions in which to draw deeper insights • Participants were American and international hand therapists. However, conclusions drawn seemed bias towards American participants
Valdes et al., 2020 (article in press)	Hand therapists' perspectives on content that should be included in a potential competency exam for students pursuing hand therapy placements	Mixed methods, Survey	*N*=505 Members of the ASHT, including training hand therapists (United States of America)	• The survey method included closed questions with responses statistically analysed. This limited the depth of insights able to be gained • The participants were hand therapists (including training hand therapists), but limited to America

Authors	Research questions/ Purpose	Methodology/ Methods/ Tools	Participants	Strengths and limitations
van Stormbroek & Buchanan, 2017	Participant experiences of what hand rehabilitation was provided to patients, the supports and barriers to the service and their perceptions of being equipped for hand rehabilitation	Descriptive cross-sectional study, Online questionnaire	*N*=104 Novice OTs practising clinically in hand rehabilitation (South Africa)	• There was a good description of the questionnaire development which included the ability for participants to add written descriptions of their experiences • The paper provided clinical implications regarding support for hand therapists • The participants were limited to OT hand therapists from South Africa

Note. ASHT = American Society of Hand Therapists; BAHT = British Association of Hand Therapists; CHT = certified hand therapist; CPD = continuing professional development; ESP = extended scope practitioner; OT = occupational therapist; PT = physiotherapist

My review of published literature and grey literature is grouped into the following categories: Support for Aotearoa occupational therapists and physiotherapists, Support for training hand therapists, Therapist perspectives on support, Support for rurally based therapists, and Cultural support for Aotearoa therapists. I felt these groupings provided a coherent narrative of how support is viewed and delivered in hand therapy, more broadly within Aotearoa and within the health context. Cultural support and rural support were also included as they were important areas of understanding in the Aotearoa hand therapy context.

2.2.1 Support for Aotearoa occupational therapists and physiotherapists

Support for allied health staff has developed over time. It is reported in international literature that the priority of health-based clinical governance and an increasingly challenging and complex work environment has led to the development of frameworks to support staff, improve the quality of services provided, and safeguard standards of care (Bell et al., 2014; Hall & Cox, 2009). The literature describes support frameworks as initially consisting of clinical supervision and continuing professional development. Clinical supervision has further developed to incorporate reflective practice, which is shown to aid problem solving, improve practice, and increase the understanding of professional issues (Hall & Cox, 2009; Sellars, 2004). Furthermore, additional developments from Australia have provided allied health professionals with professional supervision, mentoring, peer group supervision, peer review, work shadow, in-service, journal club, and professional or work-area specific requirements (Bell et al., 2014).

In Aotearoa, the Health Practitioner Competence Assurance Act (HPCA Act) published in 2003 provides the framework for the regulation of health practitioners. The Act protects the health and safety of the public by ensuring practitioners are competent and fit to practice. The Ministry of Health administers the HPCA Act for OTs and PTs through their respective boards (Ministry of Health, 2003).

The OTBNZ recognises support, supervision, and mentoring throughout its regulatory competencies for registration and continuing practice (Occupational Therapy Board of New Zealand, 2015b). Although the OTBNZ does not explicitly define support for OTs, it does imply support through professional supervision, which it defines as:

> "A structured intentional relationship within which a practitioner reflects critically on her/his work, and receives feedback and guidance from a supervisor, in order to deliver the best possible service to consumers. Professional supervision may incorporate any aspect of a professional role, e.g., clinical, managerial, or cultural, and be one to one, one to group" (Occupational Therapy Board of New Zealand, 2015a, p. 9).

The PBNZ has developed the Physiotherapy Standards Framework, which states the key competencies required for PTs to meet and maintain competency. Support is not an explicit mandatory requirement for physiotherapy competency. However, it is recognised as an enabling component in meeting the key competency of a reflective practitioner and self-directed learner (Physiotherapy Board of New Zealand, 2018b). Furthermore, a supportive professional relationship has been defined by PNZ to include clinical supervision, cultural supervision, mentoring and peer review or support (McDowell & Sole, 2016).

2.2.2 Support for training hand therapists

Although the literature regarding support specific to hand therapy training is limited, several studies have researched the CHT population with the overarching goal of facilitating the development of the next generation of hand therapists (Short et al., 2020; Short et al., 2018; Valdes et al., 2020 (article in press)). The field of hand therapy requires significant continuing education and experience beyond the general curriculum of the occupational therapy and physiotherapy undergraduate programs. Research shows that much of the advanced skill set required by hand therapists is gained through clinical experience in the workplace setting (Kasch et al., 2003; Short et al., 2018). The novice hand therapist gains these skills by acquiring unique advanced knowledge from expert hand therapists (Short et al., 2018). Therefore, expert clinicians need to pass on their skill set and expertise to the next generation, so OTs and PTs can continue to provide hand therapy care (Short et al., 2018; Stanton, 2006). This sentiment was supported by renowned hand therapist Judie Colditz who encourages the legacy of giving, so knowledge, skills and dreams are passed onto the next generation of hand therapists (Colditz, 2011).

There is concern that an ageing population of experienced clinicians will lead to a potential loss of vital experience and skill sets in the profession and the inability to

support new generations of hand therapists. The mean age of CHTs has risen from 42 years in 2008 to 49 in 2019 and is expected to continue to rise (Keller et al., 2016; Keller et al., 2021 (article in press)). Alongside the experience and skills needed from ageing hand therapists, the relationships these therapists have established with surgeons need to be nurtured. These relationships have been fundamental to the advocacy and development of hand therapy and are crucial for ongoing success (Stanton, 2006).

Another limitation for AHTs has been the availability of clinical placements. The American Society of Hand Therapists (2016) reported high demands on clinicians' time (providing direct patient care, administration duties and ongoing personal education), which Short et al. (2018) suggested restricted clinicians' availability to accept students for clinical placements. To improve the ability of hand therapy students to gain clinical placements, Short et al. (2018) found clinicians preferred the hand therapy placement to be the final placement for the student, and include: a prerequisite interview to be undertaken before accepting the student; a site-specific manual or module undertaken by the student prior to the placement; a motivated student matched with a strong teaching clinician for reciprocal relationship and mutual benefit; more hand content during academic preparation; a letter of recommendation or reference; and observation within the hand therapy clinic before commencing the placement. Short et al. (2020) examined the American accredited occupational therapy program leaders' perspectives of increasing hand therapy content in undergraduate training. It was found that even though increased inclusion of specific hand therapy training into the undergraduate program would be beneficial, continuing the current emphasis on occupation teaching alone was recommended for a more holistic understanding of rehabilitation practice (Short et al., 2020). The authors discussed how the results of the 2020 study conflicted with earlier results (Short et al., 2018) and suggested that the rebuttal against additional hand therapy training for occupational therapy undergraduates was due to a lack of CHTs within the academic teaching programs and within hand therapy professional organisations.

Further to the results of Short et al. (2018), a survey of American hand therapists was conducted to identify content that should be included in a potential competency exam for students pursuing hand therapy rotations (Valdes et al., 2020 (article in press)). The

most important knowledge areas included anatomy and physiology, communication skills, and assessments and interventions. This information was collected to inform a competency exam that potential hand therapy students could take to assess their preparation and aid their ability to gain a hand therapy clinical placement.

Although these studies have focused specifically on hand therapy and the continued development of hand therapists, the perspectives are from qualified and experienced hand therapists and non-hand therapist academic staff. The perspectives of training hand therapists and the support needed for their improved journey is still relatively unknown.

Other studies, such as one by van Stormbroek and Buchanan (2017) explored the perspectives of novice OTs delivering hand therapy in South Africa. Although participants were new-graduate OTs without specific hand therapy training, the findings lend insight into the areas of support that might be needed for Aotearoa AHTs. Participants stated that the most desired resources to support their practice were continuing professional development courses, access to guidelines and protocols, regular support and supervision from an experienced colleague, and improved undergraduate practical exposure (van Stormbroek & Buchanan, 2017).

Two other studies explored hand therapy training in Bangladesh (O'Brien et al., 2015; O'Brien & Hardman, 2014). These studies showed that experienced hand therapists found their Western practices did not always provide the best practice solutions. They felt the Bangladeshi trainee hand therapists held good theoretical knowledge but needed teaching to translate this knowledge into clinical practice (O'Brien & Hardman, 2014). Therefore, O'Brien et al. (2015) explored the Bangladeshi trainee hand therapists' experiences of an online training program. The authors found that multimodal teaching strategies were vital, along with a local champion to provide cultural support. Additionally, peer support and collaboration were also important in facilitating learning. A major barrier identified was logistical issues with the online program, which they found caused the therapists considerable stress (O'Brien et al., 2015).

These international studies highlight the importance of gaining specific Aotearoa AHT perspectives as each cultural group has unique issues and solutions. Aotearoa's own

unique cultural group will also come with their own support needs, essential to their hand therapy journey.

2.2.3 Therapist perspectives on support

Research exploring therapists' perspectives of support outside of the hand therapy field has tended to focus on the transition from being a student to becoming a new graduate. Nayar et al. (2013) recognised the need for support in the development of new-graduate OTs in Aotearoa. Following a relatively shorter registration process compared to international standards, it was recommended that time and support was provided in the OTs' first years of practice for their ongoing skill development. Studies show that preparedness for independent work is aided by a solid clinical skills base, participating in extra-curricular based activities (outside of work), supportive colleagues and mentors with expertise, continuing professional development (CPD), and a supportive work environment valuing learning and the development of staff over profits (Atkinson & McElroy, 2016; Tryssenaar & Perkins, 2001; van Stormbroek & Buchanan, 2017).

Student to new-graduate research has also shown that professional supervision was an important support mechanism. Professional supervision is a preferred term for PTs as it includes support for clinical, managerial, and work-related personal issues (Redpath et al., 2015). Some new graduate PTs receive considerable amounts of professional supervision and CPD which can lead to broader thinking and reflective practices (Hall & Cox, 2009). Moores and Fitzgerald (2017) also found that supervision, support, and education were essential for OTs transition from students to practitioners, but it needed to be underpinned by the development of the therapists clinical reasoning, professional identity, and having an active approach to learning and reflective practice.

Finally, Clark et al. (2013) found OT new graduates working in hand therapy (and aged care) experienced the highest percentage of near-misses and mistakes in their practice. The authors recommended mentoring, education and structured supervision for newly trained professionals to aid in the reduction of these practice errors.

Research relating to supervision for senior PTs has focused on developing senior PTs as supervisors rather than support for the senior staff themselves (Davys & Beddoe, 2009; Hall & Cox, 2009; McAllister et al., 2008). A recent Interpretive Descriptive study

in Aotearoa explored low uptake of professional supervision in private practice (Holder et al., 2020). Participants indicated that professional supervision was not seen as a normal part of the physiotherapy private practice culture, and a lack of understanding limited engagement with it. While Holder et al. (2020) focused on professional supervision, the authors found participants valued support from other forms of CPD activities which could aid technical skill development and were also viewed as more cost effective.

The experiences of therapists as they extend their training have also been studied internationally, with the development of extended scope practitioners (ESPs) or specialist roles. These roles have been developed for several reasons, including reducing unnecessary consultations by medical specialists and patient wait times, and in recognition of the advanced expertise of the therapist (Gardiner & Wagstaff, 2001). Stanhope et al. (2012) described PTs working in specialist roles as having varied levels of training and support. Dawson and Ghazi (2004) found that therapists in these roles wanted adequate time shadowing the specialist, peer support, professional development, and acceptance from the wider medical team.

The study of hand therapists in specialist roles is limited. However, research of hand therapists as ESPs was completed in the United Kingdom (Ellis & Kersten, 2001, 2002; Ellis et al., 2005). Again, these roles have been developed to aid medical teams and their waitlists, and as an offer of a career opportunity to highly experienced staff. However, these ESP roles are without official recognition from professional bodies. Without this formal recognition, therapists reported a need for support with the legal aspect of working in these roles (Ellis & Kersten, 2001). They also reported having unmet training needs with a significant lack of any formal training. Therapists identified formal training as a potentially valuable developmental support (Ellis & Kersten, 2001, 2002; Ellis et al., 2005).

Literature relating to therapist perspectives of support exists, including support at senior levels, but unfortunately none connects directly to AHTs. However, we can draw from these perspectives that a broad range of support is needed for all stages of a therapist's career.

2.2.4 Support for rurally based therapists

Research relating to support for rurally based therapists is limited. In Aotearoa, difficulty in recruiting and retaining OTs and PTs is recognised in rural communities, as is a lack of support, with rurally based therapists reporting feeling isolated in their work (Reid & Dixon, 2018; Stokes & Dixon, 2018). A project is currently underway to better understand and support allied health professionals in these rural areas (Physiotherapy New Zealand, 2021, February).

Internationally, Roots and Li (2013) undertook a meta-synthesis study to understand the factors associated with recruiting and retaining OTs and PTs in rural settings (most were based in Australia). The study found that professional support was important to recruitment and retention, with new graduates seeking support to develop a professional identity and become comfortable with their clinical skills. In comparison, when an organisation in a rural setting promised professional support that did not eventuate, this contributed negatively to therapist retention (Roots & Li, 2013).

Rurally based therapists face challenges of poor access to resources, high levels of staff burnout, and professional isolation (Rourke, 2010). Research has indicated that rural allied health therapists value supervision as support and find that it improves job satisfaction (Ducat & Kumar, 2015). Furthermore, CPD courses, especially those presented online, were considered necessary support by novice hand therapists. However, concerns were noted regarding accessible and reliable internet connections (van Stormbroek & Buchanan, 2017).

Research relating to rural hand therapy support found that OTs and PTs (without hand therapy training) working remotely often did not have the specialised skills required to treat hand conditions, nor the ability to identify when there was a specific hand problem needing treatment (Kingston et al., 2015). However, patients found that seeing a hand therapist mitigated these barriers and made a significant difference to their overall care. The authors concluded that rural therapists would benefit from support in the form of accessible communication with a supervisor who has expertise in hand therapy (Kingston et al., 2015).

2.2.5 Cultural support for Aotearoa therapists

The professional needs of Māori and Pasifika students and graduates can differ from their predominately Pākehā classmates and colleagues. Research relating to the support of Māori and Pasifika in occupational therapy and physiotherapy has mainly focused on improving the journey to and within tertiary education, workforce development, and the overall cultural safety of the professions (Davis, 2020; Ratima et al., 2006; Wikaire & Ratima, 2011). However, support specific to Māori and Pasifika hand therapists, or the broader professional areas of occupational therapy or physiotherapy, is limited.

Support for healthcare professionals of diverse cultural or ethnic groups must be comprehensive, start early in the therapist's education journey, and follow through to aid in their retention in the workforce. Wikaire and Ratima (2011) found that a supportive approach is needed for Māori participation and retention within the physiotherapy profession, including at a system (actions of governmental bodies), organisational (educational and physiotherapy providers), and individual (the Māori student) level. Furthermore, Māori OTs were found to require the tertiary education environment to align with their Māori values. This, in turn, then provided them with a culturally safe space to learn (Davis, 2020).

Two Aotearoa perspectives were found regarding support for Māori and Pasifika therapists. A Māori hand therapist found that the support received from Tae Ora Tinana (The Māori partner of PNZ, representing and advocating for Māori PTs) helped in removing some inequity barriers for Māori PTs at governmental, organisational, and individual levels. This was achieved by supporting the cultural competency of all PTs, supporting Tikanga and te Reo Māori, and organising and delivering regular hui and mentoring for both Māori students and Māori therapists (Physiotherapy New Zealand, 2018, December). The second, a Pasifika physiotherapy student perspective recognised financial, academic, and pastoral support received through the university was significant in keeping them at university and progressing into the healthcare workforce (Physiotherapy New Zealand, 2018, December).

Research around rural and cultural support for Aotearoa AHTs, OTs, and PTs is limited. Associate hand therapists' experiences and perspectives, specifically from rural, Māori,

and Pasifika therapists, would fill a gap that recognises the unique and important insights required to strengthen these groups.

2.2.6 Common methods and methodologies

Table 5 shows that much of what is known about AHT support comes from studies that used a qualitative method, with a smaller number using a mixed methods approach. Very few of the studies clearly described the methodology used, and data were collected using a range of different methods, such as individual interviews, focus groups and surveys. Surveys have the benefit of allowing data to be collected from a wide range of participants, however some academics suggest this can limit depth and novelty of insights within the data (Thorne et al., 2004). Focus groups can enable participants to comment and share insights based on shared knowledge of others, although these can also limit less well heard voices, such as those from minority groups (Dilshad & Latif, 2013). Several of the studies used individual interviews. While this can reduce the amount of data collected, researchers argue that this method often leads to a richness of data not seen with other methods (Thorne et al., 2004).

2.3 Summary

This literature review highlights that there is limited knowledge and understandings, both internationally and within Aotearoa, about AHT support. Limited knowledge includes support in advanced practice of OTs and PTs, rural based therapists and Māori and Pasifika therapists within Aotearoa. The large gaps within the literature merit further investigation.

The current research aims to address these gaps by exploring the support for Aotearoa AHTs through listening to their experiences and perspectives. It is hoped this will provide insights into a clinical area of practice that is currently not well understood.

In the following chapter, I will present the Interpretive Description methodology used in this study and explain how this methodology addresses limitations in methodological foundation and depth of insight seen within the literature review.

Chapter 3 Methodology and methods

This chapter presents the purpose of the study, methodology, and methods. The methodology of Interpretive Description is presented as the theoretical foundation of the study. Interpretive Description allows an in-depth, rich, and nuanced understanding of a clinically-based research phenomenon (Thorne, 2008). The method section follows with a coherent overview of the analytical framework, sampling, data analysis, rigour, and ethical considerations.

3.1 Purpose of the study

Aotearoa AHTs are professional OTs and PTs who practice in the clinical area of hand therapy. Despite emphasis on the importance of support by professional bodies, the previous chapter highlighted the gap in the literature surrounding support for Aotearoa hand therapists. Furthermore, available literature showed limitations in methodological foundations and methods able to draw deeper insights into lived experiences. A better understanding of hand therapists' experiences of support is necessary for developing more tailored supports and promoting improved journeys for Aotearoa AHTs.

Therefore, the purpose of this study is to explore the experiences and perspectives of support that hand therapists receive as AHTs. Through an Interpretive Description methodology, I aimed to discover what supports are provided, how they are experienced, and how they could be improved.

3.2 Methodology

3.2.1 Philosophical background

Crotty (1998) suggests when developing a study and a research approach, it is necessary to describe our philosophical approaches and justify their use. The philosophical approaches, or paradigms, encompass the philosophies of ontology, epistemology, and axiology, which then set the research framework. These philosophical perspectives inform how knowledge is defined and how the phenomena should be studied (Crotty, 1998). As such, being explicit about the philosophical perspective underpinning the research helps the researcher plan how their study

should be conducted and ensures the methods align with the nature of the research question(s) (Bradshaw et al., 2017; Thorne et al., 2004).

The research paradigm, Interpretivism, was specifically chosen for this study to uncover the experiences and perspectives hand therapists attribute to support during their training. Interpretivism recognises the subjectivity of the experience of the participant and explores the meanings people attach to their lives (Bradshaw et al., 2017; Grant & Giddings, 2002). Interpretivism also recognises that the researcher's interpretation is at the forefront of analysis and has a crucial influence on the study. The researcher cannot be removed from the participant as the researcher's ideas will always influence data construction, and the findings produced. In this way, the researcher also becomes part of the phenomenon being studied (Bradshaw et al., 2017; Grant & Giddings, 2002).

The philosophical approach then informs the methodological choices (Crotty, 1998). Qualitative research is about listening to people, and is used to answer questions about experience, meaning, and perspective (Grant & Giddings, 2002). In considering the methodological approach within this interpretive qualitative research, a range of qualitative approaches were examined and considered.

Initially, published literature surrounding allied health support needs were reviewed for the approaches they used. Many studies used mixed method approaches, which included questionnaires and interviews. However, the mixed methods approach did not focus on the lived experiences of participants. Therefore, I reviewed other methodological approaches to see if they aligned with the research question. A phenomenological approach seeks to understand perceptions and experiences, uncovering meaning to concepts that have not been explored (Rodriguez & Smith, 2018). Phenomenology fits into the Interpretive paradigm as it investigates participants' perspectives from their subjective view (Tuohy et al., 2013). Grounded Theory also aligns with an Interpretive paradigm, while seeking to unpack the underlying processes that form symbolic interaction. Grounded Theory is useful in creating new knowledge about the behaviour patterns of a group (Coyne & Cowley, 2006; McCallin, 2003).

However, these approaches did not completely fit the intended research questions and focus of this study. While each one met certain components that explored the phenomenon of interest, such as investigating lived experiences, they did not explicitly seek to address clinically relevant questions or to inform practice. They are heavily influenced by their founding philosophers rather than driven by clinical knowledge and endeavours (Thorne et al., 2004).

Further research into qualitative clinical based methodologies led me to review Interpretive Description (Thompson Burdine et al., 2021). Thorne et al. (1997) has described how qualitative approaches derived from philosophy (Phenomenology), social theory (Grounded Theory), and cultural anthropology (Ethnography) do not entirely fit a nursing philosophy of research and could not be practically applied within the nursing healthcare model. Dr Sally Thorne (a nursing scholar) has challenged the constraints around the more traditional qualitative methodologies, and alongside her nursing colleagues, developed the applied qualitative methodological approach of Interpretive Description (Thorne et al., 1997).

Interpretive Description is an interpretive and naturalistic aligned methodology. It focuses on studying social phenomena in their natural setting, capturing subjective perceptions and understandings of a health-related experience, and interpreting them to inform credible and meaningful clinical understanding (Thorne et al., 1997). The establishment of Interpretive Description saw it being used in the nursing healthcare environment. However, as the methodology has continued to grow, it has been utilised by researchers in various health professions (Thompson Burdine et al., 2021). Interpretive Description was chosen as the methodology for my research as it aligns with my research questions and with the intended outcomes of informing clinical understandings within the wider healthcare environment. Interpretive Description will be described in greater depth in the following two sections.

3.2.2 The philosophical foundation of Interpretive Description

A philosophical foundation and logical framework are imperative in qualitative methodology. In Interpretive Description, the foundations are methodological standards which are derived from the knowledge needs of the discipline of origin and aid in providing the research with intellectual rigour, coherence, validity, and overall

trustworthiness (Thorne et al., 2004). The philosophical foundations of Interpretive Description will be explored through the philosophical positions of ontology, epistemology, and axiology. Ontology is the branch of philosophy studying the theory of being and what constitutes reality (Crotty, 1998). The ontological position of Interpretive Description is relativism. Relativism views reality as subjective and varies from person to person, influenced by the individual's consciousness. There are many realities as everyone ascribes their interpretation and meaning to the phenomenon (Bradshaw et al., 2017; Crotty, 1998).

Epistemology is the branch of philosophy studying the theory of knowledge and its creation, development, and communication. The Interpretive Description epistemology is naturalism, which assumes truth is individually held as one person's view of reality and is dependent on their subjective awareness and processing of it (Bradshaw et al., 2017). Naturalistic research accepts that multiple subjective truths are available and that these vary from person to person. When multiple subjective truths combine, this can strengthen the interpretation of a phenomenon. This view also suggests that others cannot fully discover or replicate reality as individuals ascribe their interpretation and meaning to each phenomenon (Bradshaw et al., 2017).

Axiology is the branch of philosophy that studies principles and values. The Interpretive Description naturalistic approach sees that values are aspects of human behaviour which emerge and give us aims, goals, and opinions, which, combined with our knowledge, directs our actions (Bradshaw et al., 2017).

These Interpretive Description foundational philosophical guidelines fit my research questions. The subjective views of participants' individual realities are sought in this research. The diverse nature of the views is paramount and encouraged to build a combined and comprehensive picture of AHT support. Following the alignment of the foundational philosophical guidelines to the research questions, the theoretical scaffolding can be built.

3.2.3 The theoretical scaffolding of Interpretive Description

Interpretive Description acknowledges the researcher's theoretical and clinical knowledge that they bring to a study as being essential to the scaffolding of the

research. Their clinical expertise is considered a platform to build on or orientate the research, especially when the area of inquiry is yet to be evaluated in-depth. Traditionally, a researcher's experience has been viewed as a bias requiring bracketing. However, in Interpretive Description, the researcher's knowledge and expertise of the study's phenomenon are valued and seen as a major source of insight (Thorne et al., 2004). It is pertinent that the researcher's orientation, or the lens they bring to the research, is put forward and understood for full transparency. This theoretical structure that the researcher begins with is then challenged and refined throughout the research (Hunt, 2009).

My theoretical orientation

At the outset of the research, I completed a pre-supposition interview with my supervisors. This process aimed to draw out my philosophical beliefs, motives, and presuppositions regarding AHT support that may impact the research process. When these presuppositions are known, I can acknowledge them while making space for a participant's account and meaning to be discovered (Thorne, 2008). Through the reflection following my presupposition interview, I noted where I stood and how my background influenced my experiences and perspectives. I found I valued a strong biomedical approach to healthcare and held a physiotherapy bias due to my positioning as a PT. I believed in a physiotherapy dominance in hand therapy and that OTs required significantly more support to reach the competency of PTs. I believed that support of time, effort and teaching was necessary for all AHTs, although more so for OT AHTs. The presupposition interview highlighted these views and acknowledged the potential of a bias towards the physiotherapy profession and a prejudice to undervaluing OTs. Furthermore, I noted a limited reference to culture which indicated it was not recognised in my experience of support.

Throughout the research I reflected on these beliefs. I found this was important during the interview stage as I became immersed in each participant's story. With each story I gained new insights and understandings that helped to further develop my ideas and the findings produced. I also had regular discussions with my supervisors who challenged and questioned my ideas and beliefs to help unpack the ideas I was forming. My theoretical orientation was further developed and is written about in sections 3.3.5 Data analysis and 5.5.4 Insider analysis.

3.3 Methods

The study was approved through the Auckland University of Technology Postgraduate Research Committee and ethics approval was received from Auckland University Ethics Committee (AUTEC) (Appendix 1) prior to commencing recruitment. Research consultation was also undertaken prior to starting recruitment and is discussed further in 3.5.3 Research consultation.

3.3.1 Participants

People were eligible to participate if they were Aotearoa trained hand therapists with a minimum of one year experience as an AHT and were living in Aotearoa. The criteria for participants to have at least one year experience as an AHT was to ensure that participants had an opportunity to experience some of the training process of an AHT and had been in the profession long enough to reflect on their experiences and perspectives in the interview. However, in the interest of achieving diversity across the sample, I made the following two amendments to the inclusion criteria as the study progressed. First, I reduced the criteria to at least three months experience as an AHT and second, I allowed Aotearoa trained hand therapists to be included even if they were currently living overseas. Both amendments served to increase the possible sample pool and optimise the potential involvement of Pasifika participants, given the small number of trained hand therapists who identify as Pasifika. The importance of including Pasifika therapists in this and other health research is significant as it allows the experiences and perspectives of Pasifika hand therapists to be heard, and for culturally appropriate recommendations to be provided. The events leading up to these amendments are discussed in more detail below. Sampling criteria alterations of this nature are acceptable in qualitative research as they allow the researcher flexibility to include previously omitted groups or people to enhance the validity or transferability of the findings (Robinson, 2014).

3.3.2 Sample size

Sample size needs to be sufficient to address the research question, and sample size decisions should be justified by a reasoned argument and rationale (Thorne, 2016). The rationale for a pre-determined sample size range of eight to 12 participants is presented in this section. Interpretive Description, reflexive thematic analysis, and

information power are discussed to show how they have each informed the sample size of this clinically oriented research.

Interpretive Description

Teodoro et al. (2018) report that the sample size for Interpretive Descriptive research should align with the studied phenomenon. Thorne (2008) suggests that researchers consider what knowledge is needed, what options exist for getting as close to this knowledge as reasonably possible, and how to enact the inquiry in a respectful and consistent ethical manner when determining sample size. Thorne et al. (1997) did not provide a sample size requirement but instead suggested finding a small number of participants familiar with the phenomena, who were deeply involved, and willing to share their experiences. Following this, the plan was to recruit a small number of participants with substantial experiences and perspectives of support for hand therapy training.

Reflexive Thematic Analysis

Reflexive Thematic Analysis was used to analyse the data (see further detail and justification for this below in section 3.3.5 Data analysis). Reflexive Thematic Analysis generates meaning through the interpretation of quality data constructed during the research. It is a future reflective practice and cannot be pre-determined in the form of sample size. Furthermore, in qualitative research, it is the quality of the data that is most important, not the number of participants (Terry et al., 2017).

Project sample size recommendations have been described by Braun and Clarke (2013) for researchers using thematic analysis. Braun and Clarke (2019) acknowledged that practicalities often determine the need to set sample size. Should a pre-determined sample size be required, they suggest researchers reflect on it throughout the research as data are analysed to ensure that the quality aspects of diversity, richness, and complexities have been addressed. They suggest providing a sample size range as a better format than a set singular number. For Masters projects using interview methods, they suggest between six and 15 participants.

A sample size range was therefore provided at the outset of this research. The use of reflexive thematic analysis of simultaneous data collection and analysis allowed the real time reflection to inform and further sampling and recruitment decisions. This is

further discussed in section 4.1.1 Participant demographics which outlines how ensuring a breadth and depth of perspectives determined the final sample size of 12.

Information power

The information power model published by Malterud et al. (2016) also provides qualitative researchers with a practical guideline to determine sample size. Drawing on an information power, the researcher considers the study aim, sample specificity, theoretical background, quality of dialogue, and strategy for analysis to determine whether sufficient information will be obtained by including fewer or more participants in the sample. In the context of the current study, the following was considered: the sample specificity was narrow as the study concerns a specific experience (AHT support); wide diversity was sought through a broad set of key demographics; there is previous research which has studied theory relating to the topic, however, no research was found pertaining to AHT in the Aotearoa context; as the researcher I am familiar with the area of study and have experience of the study phenomena. However, this was my first qualitative study, and I had no experience in research interviewing. There were no foreseeable concerns with the ability of the participants to actively converse in the interviews; and inductive reflexive thematic analysis was used, with the aim of clinical description rather than abstraction or new theory. Overall, when these considerations were reviewed, I determined that a smaller number of participants was required.

3.3.3 Sampling and recruitment

Purposive sampling was used to identify potential participants. Purposive sampling is often used in Interpretive Description studies as it allows for targeted sampling of participants who have the requisite knowledge and experience of the phenomena (Bradshaw et al., 2017). I used a purposive sampling technique, known as Maximum Variation Sampling, which aims for a diversity of key characteristics to capture both breadth and depth of experience (Thorne, 2008). I aimed for diversity in age, gender, ethnicity, undergraduate qualification, stage of registration, level of hand therapy experience, level of qualification, geographical area of work, and type of employer (government or private). These characteristics were important as they would have the capacity to capture the practice phenomena across time and context. Potential participants were screened for these characteristics as they responded to the study

advertisements. However, the extent to which diversity could be achieved on these characteristics depended on the available sample pool.

An advertisement was sent out via e-mail to all members of HTNZ in September 2020 (Appendix C). Individual e-mails were also sent directly to hand therapists who had previously offered to be involved, as well as to known Māori or Pasifika hand therapists.

The initial advertising resulted in 16 responses from hand therapists requesting further information or offering to participate in the research. Further research information was sent to all respondents, including the participant information sheet (Appendix D), consent form (Appendix E), and demographic sheet (Appendix F). Initially, six potential participants returned completed consent forms and demographic sheets. The demographics of these consented potential participants were reviewed, and it was decided that further advertising for target demographics could improve the diversity of participants. Targeted demographics included: male gender, Māori ethnicity, Pasifika ethnicity, physiotherapy undergraduates, rural workplaces, and DHB employees.

The more targeted recruitment approach included advertising through a presentation at the Wellington Regional SIG meeting located at the Hutt Hospital on 24th September 2020. Hand therapists at the meeting (both in-person and via the online Zoom program) were informed about the research and asked to consider participating if they fit any of the targeted demographic categories. The audience was also asked if they could refer potential participants that met the criteria to the research team. The advertising at the Wellington Regional SIG meeting resulted in three male therapists with DHB experience offering to be participants.

However, there remained a lack of ethnic diversity in the sample, particularly for Māori and Pasifika. Contact was made through hand therapy connections and Pasifika networks for Māori or Pasifika hand therapists. Contact was also made with the President of the Pasifika Physiotherapists Association (PPA) to explain the research and to ask for their help recruiting Pasifika hand therapists. The President sent an e-mail to all PPA members explaining the research and asking for Pasifika therapists to come forward and be involved (Appendix G). A quote was included in the PPA member e-mail, which is shown below.

> “The more we can feature positively in our profession's literature, the better our profession can support our unique needs and recognise our unique strengths”. Oka Sanerivi (PPA President)

As well, a Facebook post was placed on the HTNZ members group on the 20th of October 2020, targeting Māori and Pasifika hand therapists. The post asked people to come forward even if they did not think they fit all aspects of the inclusion criteria. All these methods resulted in two Māori and two Pasifika hand therapists offering to participate. However, as the two Pasifika therapists did not fully meet the inclusion criteria of the study an amendment to the research inclusion criteria was submitted to AUTEC on the 5th of November 2020, requesting two changes (detailed above in section 3.3.1 Participants) to allow the participation of these two Pasifika hand therapists. The ethics amendment was approved on the 6th of November 2020 (Appendix B).

Throughout the advertising, more therapists applied to be involved in the research so that in total there were 30 potential participants. As the study progressed, theoretical sampling was employed to identify potential participants who could speak to issues identified in the early data analysis, or address aspects of inquiry that remained undeveloped or weak. Theoretical sampling helps develop findings to form greater solidity and credibility (Thorne, 2008). For example, theoretical sampling was employed to include perceptions on both sides of the HTNZ PNZ vote (referred to earlier in section 1.4.1), enabling a wider and deeper understanding of the analysis. Potential participants who had indicated an interest but were not chosen for participation were thanked for their offer of participation and made aware that they were not required for interview.

3.3.4 Data collection

Demographic information sheets and consent forms were completed before an interview was organised. Potential participants who met the sampling criteria were contacted and invited to participate, and arrangements were made for an interview.

Interviews

Semi-structured interviews were conducted with each participant, using open-ended questions and following a topical interview guide (Appendix H). The initial interview

questions were constructed from the literature review, disciplinary knowledge, and conceptual orientation held by the researcher. The initial questions consisted of general categories that were refined as the study progressed, highlighting the development of issues, emerging observations, and a deeper understanding of the phenomenon (Thorne, 2016). A pilot interview was undertaken with a hand therapist independent of the research. This pilot interview allowed me to become familiar with the audio equipment, and to gain confidence in following lines of inquiry and asking clarification questions.

The interviews were offered via two media, in-person or via online conferencing through the Zoom program. All participants who lived within the wider Wellington region (where I reside) were informed of the option of in-person or Zoom interviews within the participant information sheet and again when organising the interview date and time. All Māori and Pasifika participants (apart from the Pasifika participant not residing in Aotearoa) were also offered in-person interviews when contacted about organising an interview time. However, all participants opted for online Zoom interviews.

Zoom is a collaborative, cloud-based video conferencing service offering online meetings and secure recording of sessions (Zoom Video Communications Inc, 2016). Key advantages of Zoom include its usefulness for conducting qualitative interviews, giving the ability to build and maintain rapport through face to face communication, convenience (particularly in accessing geographically remote participants and time effectiveness), simplicity, and user-friendliness (Archibald et al., 2019).

Participants were provided with an estimated timeframe of 45 to 90 minutes to undertake the interview. The interviews were recorded via the Zoom program as well as being audio recorded. Zoom offers the ability to securely record and store interview sessions, which is particularly important in research where data protection is vital (Zoom Video Communications Inc, 2016). Supplementary field notes were written after each interview as it was found that any notetaking during the interview interrupted the interview flow and seemed to portray that I was not listening. Observations made during the interviews, such as reactions, nonverbal language and annotations of

emerging themes, were noted as they help contextualise the data during analysis and help to maintain the integrity of the participant's stories (Thorne, 2008).

All interviews were transcribed verbatim by myself which allowed me to become familiar with, immersed in, and actively engaged in the data. This also aligns with an Interpretive Descriptive approach and reflexive thematic analysis, encouraging repeated immersion in the data before beginning coding (Braun & Clarke, 2006; Thorne et al., 1997).

A one-page summary of the key points from the interview was sent to the participants within one week of their interview. Participants were invited to review the summary of their interview to ensure their main points were captured and to add clarification or add any missing statements. This process allowed participants to contribute to developing the study findings (Thorne, 2008). All participants received their interview summary to review, and eleven of the twelve participants returned their summaries with comments ranging from no changes to many additional changes. The one participant who did not return their summary was contacted several times via e-mail and text message without response.

3.3.5 Data analysis

Data were analysed following the thematic analysis methods defined by Braun and Clarke (2006), which they call Reflexive Thematic Analysis to distinguish it from other approaches to thematic analysis. The Reflexive Thematic Analysis approach is a flexible tool which enables a rich, detailed, and complex account of data. It offers full theoretical flexibility with the potential to fit completely within a qualitative paradigm (Braun & Clarke, 2006). This form of analysis fits well within the Interpretive Description methodology's naturalistic approach of allowing themes to be developed that are applicable for clinical practice.

Braun and Clarke (2006) provide guidance for conducting Reflexive Thematic Analysis. They describe six phases (familiarisation, coding, theme development, reviewing themes, defining themes, producing the report) which they state are not linear but iterative and recursive. Familiarisation of the data includes the interview itself, transcription, and repeated engagement. A post-interview prompt sheet was developed to help in capturing post-interview reflections, furthering engagement and

familiarisation with the data. This aided in developing my ideas and challenging my thinking which continued my reflexive practice (Appendix I). The post-interview prompt sheet was used to capture my initial thoughts and feelings following the interview. As above, I transcribed all interviews verbatim into a Word document. During transcription, notes were added, and more meaningful quotes highlighted. Notes consisted of my thoughts and reflections, indication where follow-up questioning might be needed, and notes on where further subject knowledge was required. Following this, the interview summary described above was written and sent via e-mail to the participant.

Interpretive Description routinely involves data collection and analysis being carried out concurrently, allowing constant comparison throughout the analysis. In the beginning stages of the analysis, Hunt (2009) suggests that the researcher focuses on the broad questions to capture the overall picture, rather than an analysis that focuses on the intricacies of the data. This process allows insights developed during earlier interviews to be checked during later interviews and presents opportunities to refine the research and reorient the inquiry according to developing insights. Early interview engagement captured reflections and perspectives on particular topics and informed an initial interpretation of the data. As the analysis progressed, I endeavoured to go beyond the initial theoretical scaffolding to further understand and deepen my interpretation of the data.

Throughout the analysis process, all interview transcripts with initial reflections, audio, and interview summaries were shared with my supervisors. This allowed them to become familiar with the data and support and challenge my thinking throughout the process. This reflective practice and discussion allows a deeper level of interpretation to occur and keeps the analysis connected to the research questions (Braun & Clarke, 2006; Terry et al., 2017).

Coding and theme development

With Interpretive Description, it is necessary to analyse within and beyond the initially presented ideas by inductively reasoning, testing, and challenging preliminary interpretations to describe the phenomenon in a meaningful manner (Thorne et al., 2004). This approach of a challenging and refining process also helps illuminate

assumptions and preconceptions that may have influenced the design and development of the research (Hunt, 2009).

Inductive coding was used, including working in a bottom-up approach and using the data as a starting point. Through the immersion with the data, latent codes were developed. Latent coding allows a deeper analysis level by capturing implicit meanings that are not explicitly stated (Terry et al., 2017). The comment function on Microsoft Word allowed codes to be placed throughout the transcript and viewed easily down the right-hand column (Appendix J). This was not a process of line-by-line coding (which is discouraged in Interpretive Description). Rather, it involved highlighting concepts relating to hand therapists' perspectives and experiences of support. Coding began part way through the interview process, while there were still interviews to take place. Coding continued following the interviews, with each interview and transcript reviewed numerous times to ensure all data items were thoroughly coded. The recursive process was undertaken as new codes and ideas generated in later transcripts were taken back to earlier transcripts to refine and further develop the ideas.

With Reflexive Thematic Analysis, theme development involves examining the codes and combining the codes into meaningful patterns (Terry et al., 2017). This process involved the development of provisional themes. Provisional themes were presented to my supervisors on three occasions to gain their input and suggestions. Thematic maps were used as visual aids to enhance my ability to identify and understand potential themes in relation to each other and the data set (Appendix K). The themes were reviewed and refined, adjusting provisional themes into final themes to tell a meaningful narrative of the data set that answered the research questions. This process was recursive, with continuous checking and questioning between my research supervisors and myself to ensure the essence of the data was portrayed in a meaningful and clinically relevant way (Terry et al., 2017).

Additionally, consultation was sought with a Māori researcher based at AUT in the provisional theme stage. One transcript from a Māori participant alongside a summary of the theme development was presented and then discussed between my research supervisor, the Māori researcher and myself. The discussions encouraged me to look

past the more superficial findings to the essence of what was being portrayed. The use of te Reo Māori (the Māori language) was also discussed and how it could be accurately and meaningfully used within the report.

Thoughtful Clinician Test

In the process of building the coherent professional narrative, the narrative must allow for the variations and individual differences that come from each profession and clinical area (Hunt, 2009; Thorne et al., 2004). Thorne et al. (2004) describe the Thoughtful Clinician Test in which experts in the field provide feedback on the research being credible, influential, and providing new understandings. It is argued that this peer-review and acceptance from field experts provide more research integrity than rigid adherence to methodological rigour (Thorne et al., 2004). Thorne (2008) suggests specifically selecting experienced clinicians to consider the research across time and context as it can aid in creating findings that have real clinical impact.

To apply the Thoughtful Clinician Test, a summary of the themes (Appendix L) was presented to three hand therapists who I considered to be experts in the field of hand therapy. I had discussed five different hand therapists with my research supervisors to decide who would be best to peer-review the findings. The three hand therapists chosen represented diverse characteristics including Māori heritage, occupational therapy profession, and physiotherapy profession. They all had a long history of involvement with AHTs and with the Aotearoa hand therapy community in various capacities. As experts with knowledge and experience of Aotearoa hand therapy they were able to provide valuable feedback on the relevance of the research. They were invited to review the theme summaries and give feedback on four questions: 1) What are your first reactions/ gut feelings? 2) What does/ does not resonate with your own experiences? 3) Can you see the relevance to the field of hand therapy? And 4) Can you see the findings aiding to the development of AHTs in Aotearoa?

The feedback provided by the expert hand therapists suggested that the themes did show relevance to the practice of hand therapy and were applicable to the context of hand therapy. One respondent reflectively recognised cultural safety limitations in her practice and the need to improve this.

> *"Whilst I believe I am culturally safe in my clinical practice, there are definite limitations in my cultural knowledge of both Māori and Pasifika – both of which I am keen to improve on".*

After the final consultations with the expert hand therapists had been reviewed and discussed with my research supervisors, data collection and analysis were concluded. This is in alignment with Thorne (2016) who reported that an endpoint to data collection and analysis can occur in clinically oriented research, when the researcher has seen and interpreted enough to confidently say something relevant to the phenomenon.

3.4 Rigour and credibility

With Interpretive Description research it is important to address rigour and report the process used to highlight the transparency and trustworthiness of the research (Thorne et al., 1997). Clearly communicating the rigour of the research provides the reader with confidence that the data, methods, and interpretation used were of high quality and that they can have confidence in the findings. Rigour is essential in Interpretive Description research as clinical recommendations may be directly applied to the healthcare sector (Thorne, 2016). Therefore, a sound critique of Interpretive Description qualitative research beyond the surface level requires more than meeting critique guidelines. It requires deep reflection and questioning about how meaning is gained from the knowledge and the clinical implications that may come from it (Thorne, 2016).

Thorne (2008) describes four guiding principles that are generally accepted in evaluating the products of Interpretive Description research: epistemological integrity, representative credibility, analytic logic, and interpretive authority. Further to this, Thorne (2016) has discussed a more subtle research critique which can be applied to situate research in the disciplinary, social, and historical contexts in which it takes place: moral defensibility, disciplinary relevance, pragmatic obligation, contextual awareness, and probable truth. The four guiding principles and the contextual critique will be discussed in relation to this research below.

3.4.1 General principles for rigour and credibility

Epistemological integrity

Epistemological integrity refers to the study questions aligning with the epistemological standpoint of the research. Great care has been taken throughout the research to ensure constant alignment with the Interpretive Descriptive methodology. Thorne (2016) calls on researchers to disclose their epistemological positioning so strategies can be formed to respect these positions. In this study, the presupposition interview allowed disclosure and reflection upon biases and prejudices I bought into the research. Ongoing reflection of these biases and prejudices also occurred throughout the analysis process, and my research supervisors continuously challenged my thought processes and ideas.

Representative credibility

Representative credibility requires researchers to recognise that this research makes theoretical claims relevant to the context in which the research has been undertaken. The credibility of the research also refers to ensuring deep and prolonged involvement in the phenomenon (Thorne, 2016). Deep involvement is shown by gaining knowledge through many lenses. In this study, interviews were undertaken with twelve diverse key informants for elements of meaning and context. Professional and cultural diversity was also sought as well as contrasting views on issues, including the bias towards a physiotherapy dominance and the HTNZ PNZ vote. I purposely asked questions during the interviews to prompt participants with ideas around this. Furthermore, I often summarised perceptions from previous interviews to see how these views were experienced and perceived by subsequent interviewees.

Analytic logic

Analytic logic represents accessible evidence throughout the research (Thorne, 2016). Qualitative studies need to be transparent in the structures, interpretations and knowledge claims presented (Thorne et al., 2004). This is shown through thoughtfully designed and clearly written methods. Furthermore, section 3.3.5 Data analysis describes the inductive reasoning process followed and the decision processes undertaken.

Interpretive authority

Interpretive authority ensures that the researcher's interpretations of the data and presentation of the findings are trustworthy. Interpretive authority is seen through the participant's provision of feedback following a review of their interview summary, thus checking my interpretations against those of the research subjects. Interpretive authority is also acknowledged in the hand therapy community context through the Thoughtful Clinician Test, and further cultural trustworthiness through consultation with a Māori researcher during the data analysis phase.

3.4.2 Subtle critique

Moral defensibility, disciplinary relevance, contextual awareness

Moral defensibility describes convincing claims about the purpose of gaining knowledge and how this knowledge will be used (Thorne, 2016). The in-depth literature search completed at the outset of the study indicated a lack of knowledge around the support needs for hand therapists internationally and in Aotearoa.

As stated previously, Thorne (2016) recommends that researchers consider that their findings could potentially be used directly in clinical practice, and therefore, disciplinary relevance and contextual awareness are essential. The Thoughtful Clinician Test and Māori consultation were undertaken to ensure the findings were relevant to clinical practice of hand therapists and the cultural groups within Aotearoa.

3.5 Ethics

3.5.1 Ethical approval

Health research undertaken in Aotearoa must meet ethical standards set by the National Ethics Advisory Committee. Regulated ethics committees then check and approve these standards (National Ethics Advisory Committee, 2021). Ethical approval for this research was sought and approved by the AUTEC (Appendix A). An amendment to the inclusion criteria as discussed in the recruitment section of this chapter was also requested and approved by AUTEC (Appendix B).

3.5.2 Ethical considerations

Aotearoa is a culturally diverse country. Therefore, researchers must consider cultural viewpoints to ensure their research reflects the context and perspective of the society

in which it occurs. Furthermore, participants must be respected, and assured health findings generated are effectively implemented. This section presents notable ethical considerations around informed and voluntary consent, privacy and confidentiality, and cultural sensitivity.

Informed and voluntary consent

Consent was gained as an ongoing process throughout the research. Interview question and duration guides were provided to participants as the questioning and duration can change depending on the participant. Therefore, this requires an ongoing consent process which is well recognised in Interpretive Description research (Thorne, 2016).

Informed consent was enabled through full participant information provided from the onset of the research and a copy of the proposed interview questions being provided to participants before the interview. This allowed participants to understand the types of questions that would be asked, time to read the questions, and time to think about how they might answer them.

To further aid in participants' decision to participate, I removed myself from participating in the HTNZ executive registered membership approvals for the entirety of the study. As I hold the role of Secretary for HTNZ, there was the potential of a power deferential in my favour, which could be alleviated by removing myself from this executive activity. A copy of my HTNZ executive exclusion letter can be found in Appendix M.

Privacy and confidentiality

It was essential to uphold participants' privacy and confidentiality during the research and in the dissemination of the findings. All participants were interviewed outside of their working hours to aid in privacy and negate potential employment conflicts with using their work time for non-work activity.

Hand therapy is a relatively small community in Aotearoa with 356 members (Hand Therapy New Zealand, 2021b), of which there are small populations of ethnic groups, particularly Māori, Pasifika, and Asian. Therefore, ongoing conversations with my supervisors were held regarding participant identification and changing the wording in

certain quotes (while keeping the essence of the quote) to ensure participant confidentiality. All identifying features such as the participant's name, place of work, geographical area of work, and age were removed before any dissemination of results occurred. Pseudonyms were used to aid in confidentiality where participant quotes were used (further information on pseudonyms can be found in section 4.1.1 Participant demographics).

Social and cultural sensitivity

Aotearoa is a culturally diverse country with obligations relating to Te Tiriti o Waitangi. As reported in the 'Participant' section, attention was given to gain the experiences and perspectives of Māori and Pasifika hand therapists in this research.

From the outset of the research, I was aware of my positioning culturally as Pākehā and the potential limits this would place on my understanding of Māori and Pasifika participants. Therefore, I needed to complete each part of the research appropriately to recognise Māori and Pasifika cultures. How this was achieved is presented below.

All Māori and Pasifika participants (apart from one participant who lived internationally) were offered the choice of having their interview in-person, although all chose to complete them online. Relationships were formed initially through multiple e-mails. Participants knew that interview questions were guides and could stray from the set questions and speak freely on topics they felt were important to the research or their journey.

Time was spent before each interview to facilitate the development of rapport and the enhancement of mana for the participants. Karakia in the form of prayer or blessing and reciprocal pepeha (Māori introduction establishing identity and heritage) was welcomed before interviews with participants identifying as Māori. This process builds relationships, aids in cultural safety, and reduces any feelings of embarrassment or vulnerability. Participants were welcome to use their own karakia or the karakia of both traditional (non-denominational) and faith-based formats that were available for participants if required (Appendix N).

Consultation with a Māori researcher during the data analysis allowed checks on the interpretation of the data collected from Māori participants. The inclusion of a Māori

hand therapist as part of the Thoughtful Clinician Test allowed feedback on the relevance of the cultural findings to hand therapy practice for Māori.

3.5.3 Research consultation

The consultation process has been highlighted throughout this chapter, with many avenues of consultation occurring in this study. At the outset of the study, cultural consultation was undertaken with a Māori researcher, with Tae Ora Tinana (Appendix O) and with the Mātauranga Māori Research Committee (School of Clinical Sciences, AUT) (Appendix P). These consultations supported and provided advice on ways to appropriately seek cultural perspectives and on conducting the research as a Pākehā researcher. Expert opinion was also purposely sought from a Māori hand therapist during the Thoughtful Clinician Test as mentioned in the previous section.

Consultation was undertaken with the co-chairs of the HTNZ Education Committee. This consultation and the advice received led to the incorporation of OTs' perspectives and experiences, which provided a deeper and more relevant outcome to the study. The research summary for hand therapy consultation and consultation feedback can be found in Appendix Q.

Lastly, consultation was undertaken through a practice conference presentation to the AUT Centre for Person Centred Research team. The feedback helped ensure that dissemination of the findings was clearly presented and provided the best impact for the audience (the feedback can be viewed in Appendix R).

Chapter 4 Findings

In this chapter I provide findings about the support needed for AHTs while they complete their training in Aotearoa. The outcomes of Interpretive Description research focus not on listing individual themes but rather forming a coherent professional narrative. This chapter will follow the journey that AHTs take in their hand therapy training, focusing on the essence and intricacies of that journey. I have developed the findings from hand therapists' deep and diverse lived experiences and perspectives of the realities of the AHT journey in Aotearoa. Through these findings, I draw clinical implications to inspire and advance the support of AHTs in Aotearoa.

4.1 Demographics

4.1.1 Participant demographics

Twelve participants were purposively recruited and consented to take part in this study. Table 6 shows that diverse characteristics were captured through purposive sampling, allowing for data to include a breadth and depth of experiences and perspectives.

Participant ages ranged from 26 to 56 years. Nine participants were female and three were male. Six participants were Pākehā (including those who identified as NZ European and European); two identified as Asian; two identified as Māori; and two identified as Pasifika. Four participants were OTs and eight were PTs. Two participants were currently AHTs and ten were registered hand therapists. Qualifications of participants included Bachelor's degrees, Postgraduate Certificates, Postgraduate Diplomas and Master's degrees. Hand therapy experience ranged from four months to thirty years. Nine participants worked in urban areas, two in rural areas, and one in both. Eleven participants worked in private practice and one in the DHB setting. Five participants who worked in private practice were practice owners. Some participants working in private practice reported having previously worked in the DHB setting where they completed their AHT training.

Table 6.

Participant characteristics

	Overall (*n* = 12)
Gender *n* (%)	
Female	9 (75%)
Male	3 (25%)
Age r**ange** (years)	26 – 56
Ethnicity *n* (%)	
Pākehā (New Zealand European, European)	6 (49%)
Asian	2 (17%)
Māori	2 (17%)
Pasifika	2 (17%)
Profession *n* (%)	
Occupational therapist	4 (33%)
Physiotherapist	8 (67%)
Registration level *n* (%)	
Associate hand therapist	2 (17%)
Registered hand therapist	10 (83%)
Level of experience (months/ years)	4 months-30 years
Highest level of qualification *n* (%)	
Bachelor's degree	2 (17%)
Postgraduate Certificate	4 (33%)
Postgraduate Diploma	3 (25%)
Master's degree	3 (25%)
Geographical location of employment *n* (%)	
Urban	9 (75%)
Rural	2 (17%)
Urban and rural	1 (8%)
Place of employment *n* (%)	
Private practice	11 (92%)
District Health Board	1 (8%)

Information regarding profession and ethnicity is provided alongside a pseudonym to each quote to add context. Pseudonyms are assigned to participants to provide confidentiality when quotes are used. The pseudonyms were checked against the public HTNZ membership database to ensure they did not match current members to avoid potential association occurring.

4.1.2 Interview demographics

All interviews were completed between October 2020 and February 2021. All participants, irrespective of ethnicity or geographical location, chose to conduct their interviews via the online video conferencing program Zoom. Interview duration ranged between 31 and 87 minutes (1 hour, 27 minutes), with nine out of the 12 interviews taking 50 minutes or longer.

4.2 Findings

The findings of this research are organised into four themes: Theme 1 - *Recognising and valuing the diversity of Aotearoa hand therapy*; Theme 2 - A *therapist-centred approach to learning*; Theme 3 - *An accessible community*; Theme 4 - *Hand therapy- a unified professional identity*. The framing of the theme names was deliberate in highlighting the development of insights for practice. They provide a positive outlook for clinicians looking to improve the support for AHTs, which is consistent with the applied nature of Interpretive Descriptive methodology.

4.2.1 Theme 1 - Recognising and valuing the diversity of Aotearoa hand therapy

This theme presents the disciplinary and cultural biases perceived and experienced by participants. Occupational therapists found that they routinely experienced operational and professional barriers from the structures and dominance of physiotherapy, compared to PTs. These barriers hindered their sense of worth and practice development. From a cultural perspective, Māori and Pasifika participants reported an underrepresentation of practitioners and an absence of cultural support. Further, they said that hand therapy does not recognise or value their unique diversity and they are limited in bringing their entire identities to the field of practice.

Hand therapy is unique because clinicians can enter the practice from two different health qualifications (occupational therapy or physiotherapy). Aotearoa hand therapists deliver services to patients from a broad range of socioeconomic, ethnic, and cultural backgrounds in various care settings. Yet, throughout Aotearoa hand therapy has a widespread dominance of Pākehā PTs, which appears to situate the field within their values, beliefs, and perspectives.

The following sections present the experiences and perspectives of the less dominant therapist groups, specifically OTs, Māori, and Pasifika, as these groups reported limitations in acceptance of their practices and worldviews. The sections are presented in two parts: recognising and valuing our OT hand therapists and recognising and valuing our Māori and Pasifika hand therapists.

Recognising and valuing our OT hand therapists

Participants whose undergraduate training was in occupational therapy reported experiencing operational and professional barriers that appeared to hinder their sense of worth and practice development. Participants described experiencing barriers in their access to AHT education and training positions, domineering and discrimination by ACC and insurance company policies, AUT curriculum and teaching, HTNZ structure, and the culturally held beliefs of PT colleagues. Occupational therapists expressed frustration with these barriers and felt inferior to their PT colleagues.

> *"I have found it really hard as an OT, ah, to, to get into the hand therapy world because it is very…there is a degree of discrimination within the industry. There totally is, whether they [PTs] mean for it to be that way or not. There just is. And that is the culture I think." (Mary, OT, Pākehā).*

It is important to note that both OT and PT participants saw prejudice and bias in Aotearoa hand therapy.

> *"But I think when you're entering into the training program in New Zealand, not everybody starts equal. And I'm not sure that that's acknowledged and addressed." (Kimberly, PT, Pākehā)*

Both OTs and PTs were aware of and frustrated by some of the same barriers. While the focus of this theme is on the more marginalised perspectives, general accessibility concerns also potentially limit the overall diversity within hand therapy. For example, the educational aspects of the AHT training in Aotearoa requires completion of a postgraduate paper (HAUL) with AUT in Auckland. As noted in the introduction chapter, the two of the three pathways for registration include completing the in-person HAUL paper. This issue concerned both OT and PT participants who believed this requirement led to access inequity for those living outside of Auckland.

> *"I've always had enormous concerns surrounding our HAUL programme and the way AUT was delivering it. And how it really favoured people in Auckland and having to go to Auckland all the time… How do you suddenly go off to Otago all the time, ah to Auckland all the time to…(pause) I just felt the whole set-up of the Auckland postgraduate education didn't reflect the needs of New Zealand therapists very well." (Kimberly, PT, Pākehā)*

Participants living outside of Auckland found that family commitments made it difficult to attend classes at AUT and therefore undertake the HAUL paper.

> *"I didn't tend to enjoy…(pause) going up to Auckland really. Leaving the family behind, that was pretty tough." (Joseph, OT, Asian)*

Participants also recognised barriers for OT AHTs when accessing clinical hand therapy training through hand therapy employment. Associate hand therapists must gain 1800 hours of clinical practice over three years to qualify for registration. This clinical practice is usually gained while employed within a hand therapy clinic. Yet, there are fewer opportunities for employment in clinics where these clinical hours can be achieved for OT AHTs compared to their PT counterparts. There are two primary employment sectors where AHTs can complete their clinical hours: privately funded clinical practices (private practice), and the DHB. Hand Therapy New Zealand suggests that more hand therapists work in private practice, with 116 private clinics pinned on the HTNZ 'find a therapist' map and only 20 DHB clinics (Hand Therapy New Zealand, n.d.). This contrasts information from OTBNZ who indicate that OTs predominately work in the DHB sector at 49% (compared to 27% of PTs), with only 26% working in private practice (compared to 57% of PTs) (Physiotherapy Board of New Zealand, 2020; Stokes & Dixon, 2018). One limitation to OT AHTs finding employment while they train was attributed to the more established private practice culture in physiotherapy and subsequently hand therapy.

> *"I'd say that because most of the businesses are owned by PTs, that you'll find that um perhaps more, a few more OTs would like to do it, but their opportunity is less because of it." (Ivy, PT, Pākehā)*

> *"I mean historically that's just a thing in New Zealand, isn't it? I mean, if you go back and look at the professions 20 years ago, you always had physios working in private practice in New Zealand. If you think 20 years ago, how many OTs do you know that were working private practice? Very few." (Kimberly, PT, Pākehā)*

It was also noted that PTs preferred to employ PTs over OTs in their private practice and tended to sell or transfer their private practices to other PTs rather than OTs.

> *"…but she um didn't want to sell her business to an OT and she, yeh she, she told me she wanted to sell her business to another physio." (Mary, OT, Pākehā)*

The preference for employing PTs is also seen in relation to qualifications as the undergraduate training between the two professional groups (OTs and PTs) is different. Some participants felt an ideology of a pre-existing platform of knowledge was present for PTs, but not for OTs, which compounded the difficulties in gaining employment for OTs. An idea appears to have formed within the profession, that PT knowledge and undergraduate training are more suited to the clinical area of hand therapy. As such, OT AHTs need increased training to gain the requisite knowledge base. Increased training requirements would mean an employer would need to invest more time, money, and effort to train an OT AHT when compared with a PT AHT.

> *"I'd say that it's because there's a lot more commitment of getting them [OTs] up to speed with things that are innately taught at physio school but aren't at OT." (Ivy, PT, Pākehā)*

The perceived lack of platform knowledge was recognised as a barrier by OT AHTs themselves.

> *"…because I was an occupational therapist, I felt that I needed to bridge a gap of understanding that was, that I didn't have." (James, OT, Asian)*

It also concerned OT participants that physiotherapy knowledge appeared to hold more merit than occupational therapy knowledge. They felt frustrated by the lack of recognition of their ability to provide suitable patient care as an OT.

> *"I still had a lot of people say thank you for helping me, even though I didn't know exactly every insertion point." (James, OT, Asian)*

Employers also suggested a knowledge gap and felt that OTs would be better equipped to start hand therapy, and more employable, if they first gained this knowledge base. This knowledge could be achieved through increased initial workplace training or through undertaking the HAUL paper.

> *"So, I would say that with taking on an OT hand therapist [into employment] there are, and I would say physios are generally more reluctant to do that if they haven't done the HAUL program at all. Um, and I think that's because there's probably a gap in their knowledge." (Ivy, PT, Pākehā)*

> *"I would insist that they have probably done the HAUL program 'cause they don't have enough knowledge um otherwise." (Ivy, PT, Pākehā)*

In contrast, OT participants who had recently completed the HAUL paper felt that it provided the best outcomes when undertaken after an initial period of hand therapy clinical work. Although work was difficult initially, they felt the clinical experience made the course more worthwhile as they could begin to consolidate their learning and better relate the learned theory into practice.

> *"I can't say I would agree with the um, doing the HAUL course off the bat. I think that would have probably been a lot more stressful, to be honest. Because when I did do the course that was about after six months of being on the job… So, I felt even though that the six months may not have been you know, the best of situations, it prepped me for the course when I got there." (James, OT, Asian)*

The awareness of a higher standing for PT knowledge was also perceived during completion of the HAUL paper. Occupational therapy participants found that the paper was aimed at the physiotherapy profession and favoured physiotherapy views and knowledge.

> *"There's a lot more physio stuff than OT stuff in that course. And so, I think if you're going in without anything, it's probably quite bamboozling." (Kathleen, OT, Pākehā)*

This perceived bias was found to be reinforced by hand therapy lecturers.

> *"She [lecturer] started off saying OTs, you're going to struggle with that and then the entire way through the lecture was saying about how 'oh, physios you can do this' and almost ignored the OTs… I just thought that as a hand therapist, she should have known better to you know, make allowances for both um, rather than just for, basically just saying I'm only just going to speak to the physios and just help them learn and just leave the OTs behind." (Kathleen, OT, Pākehā)*

Participants also felt surrounding structures perpetuated barriers and biases. For example, the regulations set by ACC have given PTs an advantage to being employed as an AHT.

> *"It isn't a physio biased position [profession]. But I think what it is, is that um ACC has made it as such." (James, OT, Asian)*

Participants from various backgrounds (OTs, PTs, and employers) reported that because OTs are unable to complete ACC45 forms for initial consultations their employment is limited. This restriction for OT hand therapists is longstanding and is regardless of their associate or registered hand therapy status. In practice, an initial ACC funded consultation and the corresponding ACC45 (initial consultation paperwork) can only be completed by a PT (Hand Therapy New Zealand, 2020a). Of note, the new ACC 'work around' approach (referred to earlier in section 1.4.2), continues to require a PT to complete the ACC45. This requirement can have significant limitations on OT hand therapists' employment opportunities, in particular their ability to work independently.

> *"There's also the aspect which is um a little bit of a struggle in that occupational therapists don't have the same um ability to sign off on some of that ACC paperwork. Which um, I think you get to a point where you can't necessarily have so many occupational therapists on one site where that limits what you're able to, to finish signing off." (Linda, PT, Māori)*

> *"We [OTs] don't have quite the same power, even the fact that we, we can't, we're not supposed to fill in the [ACC]45s, you know, when we're doing exactly the same job. Um, you know, it does feel a little bit like we are underrated." (Kathleen, OT, Pākehā)*

One participant highlighted this limitation when applying for a hand therapy job with a PT clinic owner.

> *"Oh, um it would be handy to have someone, another hand therapist um in our clinic. But how would you possibly fill in the ACC45 forms? No, I don't think this, that would work for us. We would need another physio." (Mary, OT, Pākehā)*

However, OTs also reported positive employment experiences. Employability was more easily gained when the desire to become a hand therapist and the value of the occupational therapy qualification was recognised.

> *[Participant is relaying a story about applying for a hand therapy position] "She wasn't saying oh you're an OT sort of thing. She was like 'Oh, you want to be a hand therapist?' and the answer was 'yes'. And that was how it went." (James, OT, Asian)*

Furthermore, some OT hand therapists felt accepted and valued when working alongside other OT hand therapists.

> *"Even though I know that the numbers are massively in favour of physio than OTs. Um, but I think, I didn't realise quite how big the gap was and that's probably because just the numbers in [removal of named place of work for confidentiality] are probably as many OTs as physios, if not more. And I happen to work with mostly OTs." (Kathleen, OT, Pākehā)*

These findings show how OT hand therapists are not fully recognised or valued within Aotearoa hand therapy. Unfortunately, these sentiments are similar for Māori and Pasifika hand therapists regardless of professional background.

Recognising and valuing our Māori and Pasifika hand therapists

The shortage of Māori and Pasifika therapists was noted by participants, regardless of their ethnicity, as detrimental to hand therapy practice. It is thought that only a few Māori and Pasifika hand therapists work in Aotearoa. This was evident when just five hand therapists who identified as Māori or Pasifika offered to participate in this study after a wide-ranging advertising and networking campaign. Hand Therapy New Zealand do not record member ethnicities; however, the statistics from OTBNZ and PBNZ indicate a significant underrepresentation of Māori and Pasifika OTs and PTs (Physiotherapy Board of New Zealand, 2020; Stokes & Dixon, 2018).

> *"I think ultimately being able to get more people of um different backgrounds into any profession is a good thing. But, like when you asked me whether I um knew of any other um Māori or Pasifika hand therapists, I really don't, and that like that's not great." (Rose, PT, Pasifika)*

Participants stated that increasing the Māori and Pasifika workforce was essential to improve patient outcomes for Māori and Pasifika.

> *"If there was a way of being able to encourage more people of Māori and Pasifika backgrounds into hand therapy, that would then give them skills to be able to um, you know, to reach out to and connect with patients a bit easier." (Rose, PT, Pasifika)*

> *[Speaking about a family member who is a General Practitioner] "As a doctor he can connect with those kind of patients similar to um, to kind of my aunties and uncles and um, and people in our family because he has that similar cultural background." (Rose, PT, Pasifika)*

To grow the Māori and Pasifika workforce numbers, participants suggested increasing the awareness of hand therapy through advertising to students and junior OTs and PTs and introducing scholarships to encourage involvement in hand therapy.

> *"If there was a scholarship or maybe there would be a, a little bit of an encouragement to say if you'd like to find out more about hand therapy um, you know we might support you to go on a course. To, to try and encourage people to come into the profession." (Rose, PT, Pasifika)*

During the interviews, I specifically sought experiences and perspectives on cultural support. However, participants found it challenging to provide detail about this as they viewed cultural support within hand therapy as lacking.

> *"I don't know if I'm aware of any cultural hand therapy stuff, to be honest." (William, PT, Pākehā)*

> *"I think that both you and I know there's no really specific thing about um culture and cultural support." (Mia, PT, Māori)*

Cultural support was reported as a more recent development within hand therapy, with workplaces previously not recognising the support needs of Māori therapists. The growth of cultural support in hand therapy is attributed to organisations such as Tae Ora Tinana, Māori leadership in HTNZ, and the openness and desire of the hand therapy community to embrace Te Ao Māori.

> *"My cultural needs were not even thought about, you know 10- 11 years ago. It just wasn't something that anybody thought 'Oh, she's Māori, I wonder if she's got any sort of particular needs or she can*

> *give us some, you know, some thoughts about cultural safety'. But certainly, the organisation that I contracted to, really took on a lot and, and, you know, not because of me, but just because they've evolved in that cultural sense." (Mia, PT, Māori)*

> *"There was no cultural support whatsoever. Um, and certainly with Tae Ora Tinana now we've got, we've got some more bridges between those new grads um coming through and trying to sort of and, and trying to make sure we monitor their cultural needs. So, Tae Ora Tinana are doing a really good job of that. And that's developing more and more as well. So that's, you know, I see things as becoming more positive in terms of cultural support for associates." (Mia, PT, Māori)*

There also appeared to be an openness and desire from individual hand therapists to learn more about Te Ao Māori practices. This openness seemed to be influenced by the core values underpinning occupational therapy practice, which focus on holistic health and the treatment of the individual.

> *"And her enthusiasm and, you know, her openness I think that really, that we have to acknowledge that there is part of that [incorporation of culture] is the fact that we've got OTs in our industry, and I think that they bring that [incorporation of culture] um to hand therapy… that maybe it is the influence of OTs to a certain degree." (Mia, PT, Māori)*

Cultural support was evident within specific areas such as undergraduate university programs. However, this support was not as readily accessed by hand therapists in the postgraduate program at AUT. Instead, cultural support was sought through workplace colleagues who were considered more accessible.

> *"I think there was certainly a lot more um [cultural support] available undergrad wise. Um, perhaps also though maybe it was just that I kind of knew what was available and didn't really take much more in terms of post-grad level or into my hand therapy… Yeh, I don't know that it's not available, I just didn't use um any kind of support networks from that perspective when I was training. I did it more from the colleagues that I was working with." (Linda, PT, Māori)*

When cultural support and guidance was not available, there was apprehension about ensuring appropriate engagement with cultural practices.

> *"So many hand therapists would go 'Oh, I would like to use a greeting in my um, you know, my emails. But I don't want to get it wrong, and*

> *I don't want to offend'. Or 'somebody sent a greeting and I want to greet them back and I didn't know what to say. But I just felt like, you know, I might be overstepping the mark.' There's so much fear out there, that, and it comes from, you know, the fact that we are just amazingly lovely people, and we don't want to offend anybody." (Mia, PT, Māori)*

However, participants reported that when cultural support was available, and hand therapists were guided appropriately, cultural practices were enthusiastically accepted and engaged with. This was seen when HTNZ members were asked to share their pepeha before a webinar by a Māori presenter. Māori participants appreciated feeling connected as Māori through the engagement of culturally based activities by their peers. This also allowed Māori practices to be visible and normalised in the environment.

> *"I really felt that when everybody had done their pepeha, how that we've got this openness now." (Mia, PT, Māori)*

> *"The pleasure that I get from hearing where you're from and hearing you say your pepeha is just phenomenal…(pause) and I was just so overwhelmed…(pause) it was just such a gift for us. Um, and, and we really feel like it's a real treasure that people make the effort." (Mia, PT, Māori)*

A Māori hand therapist found that employment of Te Ao Māori health models improved cultural safety and support for all involved. Te Ao Māori (Māori worldview) recognises everything living and non-living to be interconnected. Māori values (Tikanga) are central to the guiding principles of Te Ao Māori (Durie, 1999). The Ministry of Health describes three Māori models of health: Te Wheke, the octopus and the eight tentacles that collectively contribute to waiora (health, soundness) or total wellbeing; Te Whare Tapa Whā, the four cornerstones of Māori health; and Te Pae Mahutonga, the Southern Cross star constellation bringing together elements of modern health promotion (Ministry of Health, 2015). Importantly, each model recognises that the Māori philosophy towards health is based on a holistic health model.

In contrast, Nicholls (2018) reports that Aotearoa PTs align with an arguably limited, biomedical view of the body, movement, and function. As PTs are the dominant group within hand therapy, the biomedical model is therefore prevalent in the practice.

Participants agreed with the limitations of the biomedical model and reported that the biomedical model does not work for Māori therapists or Māori patients. Furthermore, one participant believed that the integration of a Te Ao Māori model of health would be beneficial to both Māori and Pākehā. Mia (PT, Māori) reported that Te Ao Māori models of health fit the healthcare needs of all therapists and patients irrespective of background or culture and would be beneficial for the health care of all Aotearoa.

> *"She said that no Pākehā died as a consequence of it [Te Ao Māori]. So, she thinks it's going to be safe to put out there for everybody." (Mia, PT, Māori)*

> *"I don't want something that segregates, I want something that shows everybody that a Māori perspective is a great perspective to have in healthcare." (Mia, PT, Māori)*

Other ways of including culture into the profession have been tried. For example, having recognised inequities for Māori and the lack of cultural safety of Aotearoa OTs and PTs, OTBNZ and PBNZ initiated the inclusion of cultural elements into the professional development for therapist competencies (Physiotherapy Board of New Zealand, 2020; Stokes & Dixon, 2018). However, Māori participants felt frustrated at attempts to incorporate aspects of Te Ao Māori into a Pākehā healthcare model, believing cultural competence was not something that PBNZ could measure.

> *"It's very difficult to measure cultural competency and this is the problem, they're trying to, they're trying to be able to put um, something that we can't, we can't properly measure into one of the criteria for us to be registered as, as OTs and physios." (Mia, PT, Māori)*

Māori and Pasifika hand therapists did receive some cultural support, accessed through mentoring and supervision relationships. Māori and Pasifika participants valued these supportive relationships built on whanaungatanga (friendships), kaitiakitanga (guardianship and protection), and manaakitanga (hospitality, welcoming into a new environment).

> *"I think it's about having a really positive, supportive, nurturing contact that's going to really sort of raise these people up and support them and identify problems before they become an issue." (Mia, PT, Māori)*

> *"Having a mentor, having a person who's then assigned to you from the beginning that you then work with them through, that you learn from, I think that would be really helpful." (Rose, PT, Pasifika)*

It was important for Māori and Pasifika therapists that the mentor or supervisor understood their learning style and needs.

> *"I think it would be really understanding how people learn and then being able to teach them in the way that really makes sense to them." (Linda, PT, Māori)*

In summary, Theme 1 explored the diverse nature of Aotearoa hand therapy, with hand therapists coming from differing backgrounds professionally and culturally. Occupational therapist AHT's routinely experienced operational and professional barriers which they believed hindered their sense of worth and practice development. These barriers were perceived to be widespread and ingrained into the culture of hand therapy. The barriers included a dominance of physiotherapy, both in workforce numbers and in their disciplinary perspective. Occupational therapists are important AHT members so recognising and valuing what they and their profession bring to hand therapy will allow them to fully engage with their identity and practice. This recognition will support the removal of a culture of practice inadequacy and inferiority placed on OT hand therapists and improve the overall OT AHT journey.

The cultural biases presented in these findings also highlight the lack of engagement Māori and Pasifika have with their own identities in hand therapy practice. Professionally, Māori and Pasifika work within a Western biomedical model of health care, limiting their ability to bring their whole selves to their practice. There is an understanding that improving the journey of Māori and Pasifika hand therapists requires cultural support for all hand therapists alongside a holistic healthcare system that works for all.

4.2.2 Theme 2 - A therapist-centred approach to learning

This theme presents the experiences and perspectives of participants during their time training as AHTs. Clinical training for AHTs varies depending on where they have found employment. This varied clinical learning has meant uncertainty and insecurity for some AHTs in the early stages of their practice. Associate hand therapists' experience

of a therapist-centred learning approach and how a greater sense of participation with their learning can more effectively develop their skills is shown below.

Hand therapists are registered healthcare professionals because of the requirement to have successfully qualified as OTs or PTs before starting hand therapy training. However, hand therapy in Aotearoa is not a registered profession but is regarded as a special interest field of work for both OTs and PTs. As hand therapy is not a separate profession, OTs and PTs can start working as AHTs immediately following their AHT membership with HTNZ.

Associate Hand Therapist membership does not require any additional training beyond the occupational therapy or physiotherapy undergraduate degrees. However, AHTs do require an experienced hand therapist to supervise them during their journey (supervisors must have a minimum of two years as a registered hand therapist) if they want to work under the ACC HTSC (and recent AHSC) (Hand Therapy New Zealand, 2020c). After AHT membership is accepted, the trainee must complete the academic and clinical requirements within the subsequent three years to achieve full membership status. Importantly, these full membership requirements do not include clinically based training apart from what might be received during the fortnightly supervision required for an AHT over their first year.

Starting in the new field of hand therapy

Even though hand therapists are already registered healthcare professionals when starting hand therapy training, they are stepping into a field of practice that requires additional academic and practice-based learning. Participants described this experience as stepping into a whole new unknown environment and were alarmed at the considerable amounts of new information and knowledge required.

> *"Everything was new, everything was to a degree foreign as well. So, it was quite overwhelming..." (James, OT, Asian)*

> *"Oh, what the heck am I, did I get myself into? 'Cause it was all foreign." (Evie, PT, Pasifika).*

Participants were aware that a significant amount of learning, irrespective of their prior professional training (occupational therapy or physiotherapy), would be required

to become a hand therapist, but they were not prepared for how much they needed to learn. They felt that when they began, they had inadequate initial training, were insufficiently prepared, and were unsafe in their practice.

> *"I still remember when I had, when I saw my first patient. And it was this ah…(pause) feeling of inadequacy and thinking what am I doing here right now?" (James, OT, Asian)*

> *"I was, you know, groping blindly in the dark." (James, OT, Asian)*

> *"I had to try and deal with that, and it was really quite scary, and I just thought, no, this is not right, this. This is just unsafe, totally unsafe." (Mary, OT, Pākehā)*

One participant reported the sense of insufficient initial training led to ongoing feelings of uncertainty and fear that extended months into their practice.

> *"With the surgery ones I probably wasn't that confident, and I still feel like I might muck it up… that was kinda pretty freaky. But now it's kind of a little bit, a little bit ah easier but I still kinda second guess myself 'cause I haven't been shown." (Evie, PT, Pasifika)*

Participants agreed that both academic and clinical training are essential in hand therapy. They felt the academic training, received through the HAUL paper was good. However, the clinical training components, viewed as essential to gain the necessary skills to implement and consolidate the academic education and feel safe in their practice, did not always meet expectations.

> *"You can learn a bit by doing a job, but someone has to teach you." (Kimberly, PT, Pākehā)*

> *"I'm um wanting to learn obviously hand therapy, but I want to be safe. I want to feel safe. I don't want to be thrown in the deep end." (Mary, OT, Pākehā)*

> *"I need to be trained, from start through to finish. Supervision. I want to feel safe." (Mary, OT, Pākehā)*

When therapists reported receiving comprehensive clinical teaching and support, they described feeling comfortable, safe, and confident in their surroundings and abilities.

> *"You went in there feeling very comfortable. If you, you know, you had been prepped for all of those situations of if this happens, if that happens. And so, it was really good and so I felt safe, I felt safe there and that was the key thing for me." (Mary, OT, Pākehā)*

Difficulties in clinical teaching opportunities and employment were also found in more rural or isolated locations where hand therapy practices were usually small. Associate Hand Therapists working outside of large hand therapy practices or hand therapy departments (within DHBs) reported insufficient exposure to clinical hand therapy work. In contrast, participants in larger hand therapy clinics or departments frequently engaged in a type of internship and thus had more exposure to clinical work.

> *"You have to have exposure to the clinical work. It's, it's an absolutely critical, essential part of being um a hand therapist." (Kimberly, OT, Pākehā)*

> *"I think it would be much more valuable for someone who lives in [place name removed for confidentiality] who's wanting to learn how to be um a hand therapist, that they have the opportunity to work in someone's practice or the hospital um, you know the regional hand unit as an intern for a period of time." (Kimberly, OT, Pākehā)*

Another barrier to clinically based teaching was business owners' reluctance to invest time and money into training AHTs. This reluctance was based on the economic cost of time and resources and the possibility that once registered, the AHT could leave the employer, set up a practice, and become a competitor. This issue was especially apparent in rural locations, where retaining AHT staff is more complicated.

> *"So as a business owner, you're reluctant to put a lot of money into stuff, unless you're going to see true reward." (Ivy, PT, Pākehā)*

> *"I'm not going to supervise her, so she can become a hand therapist and take my trade." (Ivy, PT, Pākehā)*

There was also concern from a participant who was a business owner, that more recent AHTs felt entitled to supervision and support. Ivy (PT, Pākehā) felt that AHTs needed to show self-initiative, self-determination, and a willingness to learn, rather than expecting it to be theirs by right. Ivy valued seeing AHTs studying in their own time, studying independently and, at times, using their initiative, and their own finances to support the academic components of the hand therapy training.

> *"I think there's an element of sacrifice if you want to achieve anything". (Ivy, PT, Pākehā)*

> *"I think people want things for free or really easy and it's just, hand therapy's not like that." (Ivy, PT, Pākehā)*

Prioritised AHT clinical training

To aid clinical training support, participants valued prioritised and protected training. This sentiment was perceived to be characteristic of structured programmes.

> *"I saw the difference between a poorly supervised new hand therapist to um a well-supervised, structured program and it makes such a difference." (Mary, OT, Pākehā)*

> *"I think it would be difficult. I think it would be more difficult on the training therapist [therapist undertaking the training] to manage a caseload and train a therapist if there wasn't any good structure in place." (Mary, OT, Pākehā)*

Participants also argued that they needed individualised training that eased them into autonomous practice. This training would be tailored to each AHT with supervision and additional teaching as required. Participants believed that this therapist-centred approach would allow learning to be embedded and help the AHT to build confidence in their environment, their practice, and themselves.

> *"Just have a process that sort of cushions them into the, to the understanding and then into treating patients. So, when they do see someone, they don't feel like, oh, I don't know what I'm doing." (James, OT, Asian)*

> *"Well, it went on for as long as you felt you needed it to go on for and that was another good factor, is if you still didn't feel confident, they continued to provide that support." (Mary, OT, Pākehā)*

Participants also referred to other structural supports which aided their learning. They valued the provision of longer consultations to reduce stress from time pressures. When routine appointment times were extended, participants felt able to correctly execute treatments, reflect and consolidate learning, and seek help if needed.

> *"It was fabulous because she gave you that time." (Mary, OT, Pākehā)*

> *"Instead of like the norm was, would be half an hour but for a, a new training therapist it would be an hour. So, they'd give you an hour for everyone. Not a half-hour because it gives you time to reflect. Um, it gives you time to spend longer with the splint, making the splint and getting it right. And it also gives you time to um write up your notes more thoroughly and reflect on what you've done and talk about what you've done if you need to." (Mary, OT, Pākehā)*

Participants also valued their employer prioritising their learning and wellbeing. For example, when time allocation was given during the workday for supervision and training. This recognition was heightened when supervision and training was regularly and reliably provided.

> *"I didn't have to go and ask for supervision because that was already going to be allocated to me by my workplace. In that respect, they made things quite easy." (Mia, PT, Māori)*

> *"Sometimes they just say 'Oh yeah, you can go to that [attend an inservice]' but you're never sure like how much they want you to go to, or things like that. Whereas, because it was booked out for you, um it felt like they definitely did want me to go to that and they do, you know, they're happy for me to take time away from seeing patients um, you know for this. And the regularity of it as well." (Kathleen, OT, Pākehā)*

In contrast, participants felt disappointed and exploited if their learning was not prioritised by their employer. Some described the employer as appearing to prioritise patient treatments or other tasks ahead of AHT learning.

> *"I wanted her [employer] to take some time out to just give me that quality one on one attention. Um and unfortunately, nine times out of 10, that didn't happen because she was too busy." (Mary, OT, Pākehā)*

> *"So, it is really hard when somebody's, you know, when the experienced person has a full calendar. It's not that they don't necessarily want to give you a hand or help you, it's just that they haven't got the space." (Kathleen, OT, Pākehā)*

Understanding and relating to the AHT

To further provide support, it was important for the trainer (usually the named supervisor) to understand and relate to the AHT and to tailor training to the AHT's learning style.

> *"So, I think you need to then be flexible in the delivery. So even though there are guidelines, you need to evaluate that person. Go, 'where is their need?'" (Ivy, PT, Pākehā)*

Participants highlighted that understanding an AHT requires acknowledging and appreciating their background, their clinical skills level, and understanding and recognising their life out of work hours. Hand therapy training requires significant learning both within and outside of work hours. There are many issues that AHTs may face that need to be recognised and accepted by employers to support the individual path each AHT takes to registration.

> *"I was going to go down the case study line. Um, I was hoping to take like a bit of a break and just not have to have anything kind of outside of work for a while. But [employers name removed for confidentiality] quite keen that I just get that done and get registered. But part of me is just like why? You know. I, I don't, like [employer] keeps saying that oh if you get registered by your yearly review it bumps you up the pay scale. And I'm kind of like, that's not the most important thing to me right now getting bumped up a pay scale. It's nice. But you know a part of me is like why is [employer] rushing me through it?" (Kathleen, OT, Pākehā)*

Associate hand therapists also appreciated when there was recognition of their culture within their training. Culturally aligning the supervisor and AHT was felt to allow a safe relationship with more holistic support. A Pasifika participant (Rose, PT) shared an example of a positive therapist-centred learning approach. Although the example is not based on a clinical situation, the sentiments and views relayed by the participant are applicable. Rose recognised the need to truly understand and relate to her mentee's culture. Having similar cultures helps the supervisor understand the AHT better and helps in understanding how to support their learning better.

> *"We did a lot of stuff with food, we'd go out for dinner, we'd go out for, um and we went to the gym and I found that when she was in those situations, we would then, she'd open up a lot and be able to um, to kind of talk about her concerns and what was going on at school and, and why she was finding it difficult. So, I think if you apply that to kind of hand therapy, work stuff, if you've got an associate who's learning and they're not um, necessarily doing well with the, the structure of the way that it would normally work, I think try to figure out how to get them to, to learn and to take that information on in a way that suits them. And that, I mean, and that might have a, I don't know with um with [Mentee's name removed for*

> *confidentiality] my mentee how, I think some of that was definitely a cultural thing. Like, she was just really, she was from a big family of, she was the youngest of a really big family and just didn't really, um she was just really, really shy. So yeah, I think, I think with her, like if I was trying to, if she was my associate at work trying to teach her would have been quite different um from teaching someone else with a different um a, a different way of learning. I kind of had, I kind of had to get through to her to be able to, to really, for her and I to be able to move forward with things." (Rose, PT, Pasifika)*

Participants found difficulties in the advancement of their learning when their academic expectations and the level at which they wanted to learn did not match the expectations of their trainer or supervisor. When AHTs were not at the centre of their learning, it was perceived to be ineffectual and misused time, effort, and resources.

> *"She is a physio so she would be showing me more physio stuff like for the neck and for the thoracic ah outlet type syndrome stuff and manipulation of you know, that and the shoulder and stuff and I get it's all connected but I was not there yet. I wanted just the hand stuff more to deal with rather than going into that next sort of level of the upper limb." (Mary, OT, Pākehā)*

In summary, AHTs are a diverse group and need to be seen and supported in their own unique way. Participants reported that a therapist-centred approach to learning, with clinical exposure and training, helped them feel secure, capable, and supported in the development of their knowledge and skills. The diversity and operational challenges Aotearoa AHTs face can be better supported through greater adoption of this approach, and thus improve their training journey.

4.2.3 Theme 3 - An accessible community

Participants reported that accessible community networks are needed to help AHTs to achieve their personal and professional goals. This theme presents what an accessible community means for AHTs. It highlights the need for long-lasting, trusting relationships and connections to integrate AHTs into the hand therapy community. It also makes visible the difficulties reported by AHTs who work outside of large clinics and the necessity of developing and nurturing connections individualised to their needs, locally and across the wider hand therapy community.

Participants reported that being surrounded by support networks provided company, reassurances, and comfort in their journeys.

> *"So, it, to me education is paramount, and that's what for me our whole association is about, is putting into place the pathways, the processes and facilitating the contacts to get people, a therapist educated um, rather than feeling like it's something you have to do alone." (Kimberly, PT, Pākehā)*

They also felt that having easy access to a team of colleagues was helpful.

> *"So that was really helpful, having them [the team] all around you. Being able to source them there and then at the time was very helpful." (Mary, OT, Pākehā)*

In contrast, participants reported feeling isolated when there was no accessible support. This occurred in both rural and urban areas. Rural-based therapists recognised that their sense of isolation was partly due to their geographical isolation and stated that they worked hard to build their support networks in other ways. For example, in the absence of other hand therapists, they built multidisciplinary relationships with OTs or PTs working outside of hand therapy and with rural surgeons.

> *"Informally, yeh just sort of phone calls or texts and stuff to um, to therapists or surgeons. Um, I've been invited to the local sort of physio um group. Um, the OTs at the hospital are very supportive." (Joseph, OT, Asian)*

Building support networks also saw benefits for business advancement alongside professional development.

> *"Yeh, I had to get a letter from a surgeon that said um that they'd support me through the process and if I had any questions that they would be there to assist me and they did. And that was one of the surgeons that was coming over to the coast, um so yeah, pretty easy just email or ring him." (Meghan, PT, Pākehā)*

Urban-based participants also described isolation if they were situated in satellite clinics, and some even felt isolated despite working in large practices. Isolation is therefore not specific to a geographical location but instead appears to relate to the accessibility of networks and supports. For example, proximity of people did not always mean support was accessible. When support was not proactively provided,

participants reported difficulties in seeking it, as they felt they were a burden to colleagues.

> *"And I guess the other thing that I found quite good is that there's like an open-door policy. So, if you're in a treatment, if, if you're in a session with someone and your, you know, you need to ask someone a question um the other clinicians are happy for you to just knock on their door and um ask them. But then at the same time, you kind of feel bad because um you're like invading someone else's private sessions so it's kinda a catch 22 really." (Evie, PT, Pasifika)*

Building an accessible community of support was seen as a priority. Participants recognised the necessity of developing their hand therapy network. It was essential to know the hand therapy community and to foster contacts when attending networking events. The repeated connections, relationships, and interactions through these meetings provided peer support and access to different learning opportunities.

> *"You have ah lots of formal supports from the um, your named supervisor, but then also attending special interest groups. That always helps." (Joseph, OT, Asian)*

> *"Like I'm a big person for being part of like the organisation and having, being attending um you know all the, the regular conferences and things like that. 'Cause I think you have conversations with people…(pause) So, I don't think you need to know everything, but sometimes you need to know in your community what other skill sets people have." (Ivy, PT, Pākehā)*

The annual HTNZ conference was also seen as significant in building support networks. Participants indicated that the conference provided an opportunity to meet, talk, and foster relationships with other hand therapy members and delegates.

> *"It's really nice to know that you've come through a pathway and for us now, you know, um, you know it's [many] years of turning up and seeing the same therapist at conferences and talking with them and asking them and listening, and you know and, and that's a support network, and I think that's equally as important for learning." (Kimberly, PT, Pākehā)*

In the early stages of AHT training, it appeared important to attend SIG events to begin identifying colleagues and putting faces to names. Also, personally knowing colleagues

or surgeons allowed hand therapists to provide more personalised recommendations to patients.

> *"I don't necessarily feel like I've gotten to know many people through the SIG meetings, but it's nice to be able to kind of identify faces and you know things like just get the faces of people that were, you know, getting referrals from and things like that, you know. Um, I also think it's good when you can, you've met the surgeons and things like that, um you know, it's nice to be able to say to someone I'm going to refer you to this person. I've met them. They're amazing." (Kathleen, OT, Pākehā)*

An accessible community of colleagues provides support for a diverse range of hand therapists. Additionally, it is the relationships that set the foundations for these communities to be created.

Relationships

Relationships were identified as essential to support the development of successful networks. Hand Therapy New Zealand exemplified this in their initial formation by establishing connections between hand therapists (OTs and PTs) and surgeons. These relationships have been nurtured and fostered over the years with combined clinics between hand therapists and surgeons and combined biannual conferences between HTNZ and the New Zealand Society for Surgery of the Hand.

The value of this relationship was recently brought to light when surgeons advocated for hand therapists during ACC funding negotiations for telehealth. The surgeons' advocacy was regarded by some as being instrumental to hand therapists receiving equality in remuneration between telehealth and in-person consultations (Hand Therapy New Zealand, 2020a).

> *"For them [surgeons], it was a partnership an absolute partnership, you know. They would not do the surgery without you know, the rehabilitation, you know. It was just like they would write letters to ACC or whoever saying you know or the powers at be saying it's a waste of time us doing hand surgery if we don't have hand therapists. You know just so I think that, um. Oh well, it's a, it's a symbiotic relationship that the two have to go hand in hand and work, work so well together." (Kimberly, PT, Pākehā)*

Participants also talked about the value of strong relationships through whakawhanaungatanga. Whakawhanaungatanga is the process of establishing links, making connections, and relating to people through relationships. It extends beyond whakapapa (line of descent, genealogy) to include relationships with people who have shared experiences to the point they feel and act like family (Education Review Office: Te Tari Arotake Mātauranga, 2016).

> *"So, it was actually quite an effective tool for us as hand therapists and physios, we would share with the physios and, and also that what we call whakawhanaungatanga, that connectedness also really helps you know that you're not feeling so isolated." (Mia, PT, Māori)*

Many participants talked about how they valued longstanding relationships which started early in their journey and continued throughout their careers. They spoke about the relationships developed at university (specifically AUT, where the HAUL paper is provided), continuing through postgraduate study to registration.

> *"We as hand therapists, we support each other. When we're registered too. So, it's really important, I think, to establish those relationships early on." (Mia, PT, Māori)*

Peer support relationships were also valued. A Māori participant highlighted this when she discussed the benefits of kōrero (a conversation, discussion, or meeting) in helping to reduce feelings of isolation and providing informal support.

> *"I think the kōrero between associates is probably really important so that people don't feel like they're by themselves" (Mia, PT, Māori)*

Social media such as Facebook or Messenger were another form of peer support. This peer support allowed group discussion separate from management which was a helpful mechanism for accessing support.

> *"And it was a very helpful for us to all be talking and checking in. And there was a lot of anger around the way they had been treated and so there are a couple of people who, you know, sort of sent a few emails, reactive emails because of…(pause) they sort of felt like they didn't know what was expected of them and things like that. And so that became really good for us to sort of, before they drop the bomb, get them to discuss the email as a group to see you know if their feelings because people would just sort of isolated and don't know what's going on. So, we found that that was particularly useful. You*

> *know, there was a couple of emails that didn't get sent that really did not need to be getting sent." (Mia, PT, Māori)*
>
> *"The owners of the business that I used to contract to probably are unaware that we still have a Facebook group where we can all have a discussion without them involved, because that was the problem." (Mia, PT, Māori)*

Peer support was also seen as valuable for Pasifika hand therapists. Furthermore, having peers of the same culture or background allowed them to interact with the group better and feel less intimidated to ask questions.

> *"I think if there was more PIs um, or you know Pacific Islanders doing it like and if there was like a group that you know that you could like a forum that you um like you know tap into every now and then and to ask questions. 'Cause sometimes it can be intimidating like when you're asking someone who's quite experienced and you can't really relate to them, and you're asking them a question. You kind of feel dumb. So, if you do have um other like people that you can relate to in a forum that you can kinda, 'cause I don't know any other Pacific Islanders doing hand therapy. Um, yeh so maybe something like that would be helpful." (Evie, PT, Pasifika)*

The value of peer support became evident when it was unavailable during COVID-19 alert level restrictions. Participants found that they missed the usual peer support they received when in-person classes were changed to online classes for the HAUL paper. The ability to meet, chat, and have discussions during and between lectures was unavailable, and it was more difficult for participants to develop their support networks.

> *"If we'd been able to meet the other people, I think that would have been beneficial from like a peer kind of view. So, I know I did have like some of the people here in the company, but um just when you meet people and you can discuss things and you know, between the lectures, you have a chat with someone about something and stuff like that. Um, that was a little bit lacking." (Kathleen, OT, Pākehā)*

Supervisor relationships

Supervisors are another way in which participants reported receiving support. Supervision is a mandatory requirement for AHTs during their training, with HTNZ guidelines suggesting a minimum of 30 hours annually to meet supervisory requirements. Additional supervision is necessary for AHTs working off-site. This

involves a minimum of one hour of supervision per fortnight in the first year and one hour per month, until the AHT reaches full registration (Hand Therapy New Zealand, 2020c).

Participants described placing value in a trusting and confidential supervision relationship. The time spent with their supervisor helped them to develop a close relationship. When any of these factors were lost, the relationship appeared to suffer.

> *"My supervisor did not know how to um, keep things professional. So, what was happening between myself and them was being discussed with other colleagues, which I thought was somewhat inappropriate. And, um so that led to a loss. A loss of trust. It was hard to engage someone who you didn't think was worthy of your, you know, of engaging in because you don't know what you say is gonna stay between them and you." (James, OT, Asian)*

Supervision was also valued when engaging with an experienced supervisor with extensive hand therapy knowledge. When the supervisor's knowledge was not viewed as good enough, it caused frustration and despondency.

> *"Um, I would say um that like 'cause [name removed for confidentiality] only just gotten registered and um like for her…her you know doing like supervision sessions with me like I felt like her knowledge isn't really at that level where she knows the answers to my questions that I ask her." (Evie, PT, Pasifika)*

Participants also valued an open and approachable supervisor.

> *"I guess I got on with [supervisor's name removed for confidentiality] through like, we got on quite well and she's so easy to talk to like it wouldn't like there's no qualms in asking anything really um just having someone that's approachable. Um, so approachable um made it so much easier." (Meghan, PT, Pākehā)*

Participants expressed concern about the limited number of experienced hand therapists who were available to provide supervision, further limiting access to supervision.

> *"I think there's such a real hole in hand therapy, um, and if you don't have that one person that's going to help you, um then you're kind of stuck on getting further forward." (Ivy, PT, Pākehā)*

> *"There is so much knowledge out there that needs handing on so that we can quickly get people from here to here in terms of their ability to help patients." (Kimberly, PT, Pākehā)*

In summary, AHTs often begin their journey into hand therapy alone. However, through forming a community, they can gain the support they require to help them through that journey. These communities are not formally provided as part of training but are necessary for the support of AHTs. When an accessible community is created, AHTs tend to feel a partnership in their journey, safe in their practice, and experience a sense of belonging to hand therapy.

4.2.4 Theme 4 - Hand therapy- a unified professional identity

Associate hand therapists experienced conflicts relating to their identity and standing as hand therapists. Hand Therapy New Zealand is not a regulated professional body but a special interest field of practice for both the occupational therapy and physiotherapy professions. Therefore, some hand therapists are confused about their status and progression in this field. A lack of professional identity was perceived to hinder unity and growth in hand therapy. Theme 4 presents the status quo of hand therapy practice and barriers to development of a unified professional identity for hand therapists in Aotearoa.

Identifying as a hand therapist

Hand therapy is a special interest area within the occupational therapy and physiotherapy professions in Aotearoa. While it can be perceived as a stand-alone healthcare profession, the lack of professional registration prevents this. Therefore, the professional titles of OT and PT continue to legally identify hand therapists.

Segregation has been, and continues to be, present in Aotearoa hand therapy between the two professional groups. Participants saw closing this separation and uniting as one group to be a positive and necessary change.

> *"So, the American OTs were just amazing and so internationally you were seeing these therapists and going 'wow, that's really cool' and they were a one-stop-shop. They did everything. There were no sort of, there was no dichotomy in terms of who did what. You were just a hand therapist. And so, I think in New Zealand we began to absorb more and more and more as we um accessed international sort of knowledge, training, conferences, courses, speakers um, that, that*

> *line that was so, such a divide became quite blurred." (Kimberly, PT, Pākehā)*

> *"So, in the future, what will separate a OT and a Physio and, and yeah Voc [vocational] rehab? And you know, they're already starting to blur those lines completely." (William, PT, Pākehā)*

Reduction in segregation and formation of a unified group was evident in the identifiers used by the participants who, throughout the interviews, identified as hand therapists. Participants spoke of themselves and their colleagues as hand therapists rather than defining them by their professional titles. Participants did not identify themselves as OTs or PTs unless their professional role dominated their work, or they saw hand therapy as an adjunct to their professional practice.

> *"Well, I'd say I'm a physiotherapist and a hand therapist. Probably a physiotherapist foremost and then the hand therapist, yip." (William, PT, Pākehā)*

A barrier to using the hand therapist title also came from the low public awareness of the role of hand therapy. Participants felt they needed to supply their registered professional title ahead of their hand therapist title to enable better understanding by the public and their patients and avoid any confusion.

> *"Rurally, if you said you're a hand therapist to patients, they'd like 'well I need to see a physio, like I've been told I need to see a physio.' So, like a lot of them don't understand or know what a hand therapist is and would, would be told 'oh well you need to go get some physio on your hand.' So, they'll be like 'But I need to see the physiotherapist.'" (Meghan, PT, Pākehā)*

Participants felt that the achievement and skilled advancement in being a hand therapist were unnoticed and undervalued due to the poor understanding of hand therapy by the general public. Participants found they were proud of their achievements in gaining their hand therapist status but could not present themselves as hand therapists due to the structural and public recognition barriers. This position also led to confusion and difficulty in identifying and placing themselves within the healthcare community.

> *"I am both, I'm a hand therapist and a physiotherapist. But I'm, I'm, um definitely enjoy doing um hand therapy and I'm proud that of*

> *what I've achieved. So, I would say I'm a hand therapist too, but I also am a physio." (Meghan, PT, Pākehā)*

A professional unity

The concept of segregation in hand therapy is seen in professional and organisational levels. When exploring the organisational aspects of unifying OTs and PTs, participants valued strong leadership although felt concerned with the lack of transparency and trustworthiness of the leadership. Furthermore, they wanted a fair and unified organisation with status and standing in the healthcare system.

> *[talking about HTNZ leadership] "I don't know. It's hard to tell. It's hard to read between the lines sometimes. But yeh, we'll see." (Mary, OT, Pākehā)*

Participants in this study overwhelmingly called for unity. Unity provided a sense of community and team, doing the same job and working towards the same purpose.

> *"Yeh, it helps us feel as we're part of you know a team. Working towards the greater good or the same purpose. But again, it needs to be that um we are a team, and we are working as one. You know, we're the same membership. We've had the same training. We're seeing the same patients. We're dealing with the same stuff. Um, why can't we work as one?" (Mary, OT, Pākehā)*

In 2020 a membership vote was held to decide the strategic direction of HTNZ. The possibilities were either progressing forward independently or officially joining PNZ and relinquishing the separate organisation of HTNZ. There were serious concerns from HTNZ OT members that they would experience further discrimination being part of the physiotherapy parent body. Occupational therapy AHTs felt they could lose their identity and relinquish hand therapy to the physiotherapy profession by being part of PNZ (Hand Therapy New Zealand, personal communication, August 24, 2020).

> *"And so, when this whole unification started coming ahead you know, with the PNZ you know, Physio New Zealand and it's like Oh my God, that was another bias that had come in um and to me that was just devastating." (Mary, OT, Pākehā)*

The overwhelming response was a majority vote (both OT and PT members) on the group's continuation as an independent incorporated society separate from PNZ. This vote signalled a unification of hand therapists dedicated to progressing their field of

practice. The unification and grouping together was perceived to help progress hand therapy professionally.

> *"If we are a stronger unit we can, we can build in and, and start to build on that I guess and start to put more strength behind us in a, in a professional aspect. And, and be able to point to ourselves at other professions, such as doctors, um surgeons, you know the higher professions and start to aim higher, um rather than getting stuck down as um a complimentary service I guess." (William, PT, Pākehā)*

Participants wanted hand therapy to be more distinguishable from the physiotherapy profession. They sought progression in the development and standing of hand therapy through advancements in its scientific status.

> *"There, there's probably very blurred boundaries between musculoskeletal and hand therapy." (William, PT, Pākehā)*

> *"There's relatively few hand therapy resources out there. Such as there's only um a few journals, isn't there?… And not much strong evidence for many things." (William, PT, Pākehā)*

However, the issue of remuneration from ACC was perceived to have an enduring impact on the unification and strengthening of HTNZ.

ACC's power over HTNZ

The current position of HTNZ can be attributed somewhat to its relationship with ACC. Hand Therapy New Zealand secured the ACC HTSC in 1999. The HTSC is a valuable contract as its remuneration rates are higher than those paid to PTs and OTs on other contracts. This contract was designed to reflect the skills and clinical expertise of Aotearoa hand therapists (Hand Therapy New Zealand, 2020c). Some participants felt that this higher remuneration rate, as opposed to a genuine interest in the practice of hand therapy, has contributed to the significant increase in OTs and PTs becoming hand therapists.

> *"I have a concern, and I feel the…(pause) dare I say the motivation for a number of therapists to become involved in hand therapy now is driven by remuneration. People perceive hand therapy to be a lucrative profession currently in um New Zealand because of the way the hand therapy contracts have evolved. And that deeply concerns me." (Kimberly, PT, Pākehā)*

Participants also noted the value of the HTNZ contract with ACC.

> *"I do think that we're very lucky with um, our ACC contract and how well hand therapy is funded, and I think people are a bit naive to think how hard physios have to work and how much surcharges they have to do to get even some of the money that we earn in hand therapy." (Ivy, PT, Pākehā)*

However, participants also showed concern over the reliance on the ACC contract. For example, policies including the supervision documentation and logbook were seen to cater to ACC requirements rather than to the benefit of hand therapists themselves.

> *"At the end of the day then that all that logbook hours is for, is for the contract again... It seems I see my kind of vision of hand therapy is that oh the hand therapists they're on a higher contract and everything they want to do is to protect the contract, yeh." (William, PT, Pākehā)*

These concerns also extended to ACC holding too much power. Participants reflected that ACC could effectively work in an authoritarian manner, making changes to hand therapy without challenge. It was a concern for participants that having HTNZ so heavily reliant on ACC funding could lead to challenges should ACC chose to cancel or redraft the contract.

> *"The big corporations want to come in, take it over, have it their way and yeh and we probably won't get a look in, or a say. 'Cause you know once you get the big powers in place, you haven't got a, a say in the matter anyway." (Mary, OT, Pākehā)*

In summary, participants found segregation within hand therapy but collectively they sought a unified profession. Identifying as a hand therapist was valued, yet not always possible. Participants recognised the requirement for a solid positionality of HTNZ in the healthcare environment to protect and advance the practice. They also recognise that a strong HTNZ will have the ability to effectively challenge authoritative organisations such as ACC.

In this chapter I presented four themes that were constructed through data analysis. All four themes recognised the value of individualised support throughout operational and professional levels. Participants indicated that AHT support structures and processes need to recognise and value the diversity of each therapist and what they

bring to the practice of hand therapy. They reported requiring clinically based training in which they are the centre of their learning. An accessible community needs to be fostered to provide the support needed in securing them in their journey. Finally, it was argued that to allow AHTs to feel confident and secure in their career, hand therapy needs to be further established and recognised in the healthcare world.

Chapter 5 Discussion and conclusion

This research is the first in Aotearoa to explore the experiences of support received by hand therapists during their time as AHTs. The findings show discrepancies in how AHTs experience support throughout Aotearoa. Formal professional guidance is limited and appears dependent on what the AHT's employer provides.

In this thesis, I have illuminated current insights into AHT supports, how they are provided, how they are experienced, and how they can be improved. Theme 1 'Recognising and valuing the diversity of Aotearoa hand therapy' highlights the inequities for OTs, Māori, and Pasifika and the need to recognise and raise these groups to strengthen the practice and reach of hand therapy. Theme 2 'A therapist-centred approach to learning' demonstrates the value of giving AHTs the power to personally align support to their individual needs. Theme 3 'An accessible community' reflects the need for accessible across-the-board supports, and Theme 4 'Hand therapy- a unified professional identity' focuses on the need to build the identity of hand therapists at a professional level.

In this chapter, I discuss my key findings in the context of current evidence. Furthermore, I draw on the following questions to guide my discussion (Thorne, 2016): "What are the main messages here for the practice field? What is it that I know now, having done this study, that I did not know before? Or perhaps that I did not know in quite the same way?" (pp. 183). The findings shed light on many aspects of hand therapy and AHT professional practice, but I have chosen to discuss concepts presented by the participants that appear to have the most capacity to positively impact the profession in Aotearoa. The key concepts I discuss include honouring diversity in hand therapy, the right supervisory relationship, and support through isolation and inaccessibility. This chapter also presents four recommendations relevant to hand therapy practice to improve support for AHTs. I highlight the key strengths and limitations of the study and provide recommendations for future research.

5.1 Honouring diversity in hand therapy

My findings highlight that despite a diversity in perspectives, hand therapy appears to privilege a biomedical and Western-centric approach and as such, training and support

structures are largely Eurocentric and dominated by physiotherapy perspectives. I discuss these findings and their implications below.

5.1.1 Recognising and strengthening OT hand therapists

Participants described inequity within Aotearoa hand therapy, notably as prejudice against hand therapists who had entered the practice with an occupational therapy background. Most participants referred to the widely regarded belief that physiotherapy foundational knowledge was superior to the foundational knowledge held by OTs. This finding was reflected by employers and PT hand therapists and even accepted by some OT hand therapists. This belief led to feelings of inferiority for OT participants.

The idealisation of PT knowledge has also been demonstrated within hand therapy internationally (Fitzpatrick & Presnell, 2004; Robinson et al., 2016). The biomedical model of healthcare which commonly underpins PT knowledge, is often employed in both hand therapy practice and hand therapy literature. The biomedical view tends to be provider-centred and places value on objective measures to demonstrate improvements in health and wellbeing (Robinson et al., 2016). In comparison, the occupation-based view, formed from the biopsychosocial model of health, is more holistic, patient-centred, and focuses on enabling occupation (Fitzpatrick & Presnell, 2004; Wilding & Whiteford, 2008). Research shows that the dominance of the biomedical view and lack of knowledge and acceptance of the occupation-based model of care has limited the practice and identity of OT hand therapists (Fitzpatrick & Presnell, 2004; Robinson et al., 2016).

The ongoing belief about the superiority of PT foundational knowledge drives the inequity experience for OT AHTs. This inequity was demonstrated by the finding that some employers preferred to employ PT AHTs over OT AHTs and the suggestion that OT AHTs should complete the HAUL paper before undertaking clinical work. These two findings highlight an underlying belief that the occupational therapy training is inadequate for therapists that want to train as AHTs. These findings are similar to those by Short et al. (2018), who reported that hand therapy clinical supervisors in the USA felt that the base knowledge of OT hand therapy students was insufficient and limited the OTs' chances of securing a clinical training placement. However,

occupational therapy professional educators refuted these findings and instead argued that the holistic occupation-based model of care was more valuable in the preparation of OTs wanting to train in hand therapy (Short et al., 2020).

Participants also described how ACC policies and procedures contributed to inequity between OT- and PT- trained hand therapists. Hand Therapy New Zealand has lobbied ACC for many years to recognise the diagnostic skills of OT hand therapists. The OTBNZ agrees that diagnostic abilities are within the scope of practice for registered OTs and has advocated that OTs have the necessary skills to complete an ACC45 form (Hand Therapy New Zealand, 2018a). However, ACC has been slow to react to these recommendations, and this lack of change continues to frustrate OT hand therapists. Although ACC has approved a 'workaround' to allow OT hand therapists to see new patients, the ACC45 paperwork must still be authorised by a PT which limits the autonomy of the OT hand therapist (Hand Therapy New Zealand, 2020b). A similar issue is reported by Colaianni and Provident (2010) who reported that CHTs experienced problems with reimbursement from insurance companies for hand therapists who employed occupation-based models of care. The authors argued that reimbursements for occupation-based models of care treatments were restricted due to limited evidence-based research, which dictates reimbursement policies. To compensate for this, Colaianni and Provident (2010) found that OT hand therapists relinquished their occupational-based model of care and adopted biomedical practices to ensure ongoing payments. This was believed to diminish OTs' belief in their practice and standing as hand therapists (Colaianni & Provident, 2010).

Occupational therapy participants reported feeling undervalued and not respected by their peers and other healthcare professionals who did not understand their role or function. Similar views have been noted elsewhere within the occupational therapy profession (Hummell & Koelmeyer, 1999; Keller & Wilson, 2011). Keller and Wilson (2011) report that respect and value are necessary for OTs' continued contribution to healthcare. If OTs had low value, low professional status, or little respect within a setting, it impacted their employment negatively.

The issues that OT hand therapists face are further exacerbated by their lower numbers when compared to PT hand therapists in Aotearoa, with approximately 70%

of hand therapists in Aotearoa being PTs. This contrasts with hand therapy membership internationally, where OTs make up most of the profession (International Federation of Societies for Hand Therapy, 2015). Having a majority profession dominate a practice has been recognised as a concern (Keller et al., 2016). The guiding principle determined by the founders of the American Society of Hand Therapists states that inclusiveness and bringing together the foundational knowledge of both professions optimises the outcomes for patients with hand disorders (MacDermid, 2019). Integrating the two professional groups and their associated foundations is essential to hand therapy's credibility and stance. Without the dual profession, hand therapy might lose the support and advocacy from having two parent organisations and reduce the credibility and speciality of having an interprofessional group with expertise and competency from two professions (MacDermid, 2019).

The knowledge inequity experienced by OTs in Aotearoa could be viewed as more concerning than the international situation because PTs dominate multiple areas of the practice. Physiotherapists dominate through their higher hand therapy membership numbers and through the biomedical model of healthcare being the prevalent model of healthcare used in practice.

5.1.2 Embracing culture to empower Māori and Pasifika hand therapists

Many participants, regardless of their ethnicity (Māori, Pasifika, or Pākehā), reported an awareness of the lack of cultural diversity within hand therapy. The exact number of Māori and Pasifika hand therapists is unknown. However, both Māori and Pasifika are under-represented in the occupational therapy and physiotherapy professions (Physiotherapy Board of New Zealand, 2020; Stokes & Dixon, 2018). Cultural diversity in the workforce is essential to fulfilling government obligations to Te Tiriti and improving the health equity for Māori (Wikaire & Ratima, 2011). Research shows that supporting Māori participation in the workforce is a strategy recommended for improving inequities faced by Māori health consumers (Palmer et al., 2019). Increasing the Pasifika healthcare workforce has also demonstrated improvements in access to care and health outcomes for Pasifika patients (Pulotu-Endemann & Faleafa, 2017). It has been argued that skilled Pasifika workers can improve Pasifika patient experiences by linking directly with Pasifika communities, bringing personal understandings of

Pasifika issues, and bringing Pasifika culture to the workplace (Pulotu-Endemann & Faleafa, 2017).

Some of the Māori and Pasifika hand therapists in this study reported difficulty in bringing their own identities to hand therapy practice. Reid and Dixon (2018) reported similar findings from Māori and Pasifika PTs who relayed ethnic bias, loneliness, and the need to remove their culture to survive in their roles. Participants saw cultural support for Māori and Pasifika AHTs as being incredibly important to improve workforce numbers and the overall AHT journey. However, even though there was willingness from their non-Māori and non-Pasifika peers to engage in cultural practices, this was not commonly actioned.

Participants also recognised that to improve the support for Māori and Pasifika AHTs, cultural support was required for all AHTs. This concept recognises that to fully support the development and journey of Māori and Pasifika AHTs, cultural support needs to be ingrained into the organisational and professional aspects of hand therapy and individually provided to all hand therapists irrespective of their ethnic background. This has been similarly represented in the literature. Reid and Dixon (2018) report the need to integrate cultural competency, particularly the understandings of tikanga throughout physiotherapy education and practice to allow Māori and Pasifika to feel acceptance within the profession. The extended use of tikanga and culturally competent practice in health services was also reported to be recommended in improving health inequities for Māori consumers. Furthermore, Curtis et al. (2019) and Main et al. (2006) reported that improvement in cultural safety throughout professions and organisations can aid in health equity and help Māori to feel confident and safe bringing their culture to their practice.

5.2 The right supervisory relationship

My findings showed that supervision is a core support system for AHTs which works well when there is a strong supervisor-supervisee relationship. This section discusses the value and barriers in aligning the supervisee and supervisor and the importance of cultural alignment for Māori and Pasifika AHTs.

Participants spoke consistently about the importance of supervision in their overall training support. Operational and professional hand therapy guidelines on support are sparse and focus mainly on the topic of supervision. Hand Therapy New Zealand supervision guidelines are aligned to the requirements set in the ACC HTSC, which requires regular supervision with an experienced hand therapist (Hand Therapy New Zealand, 2020c). Therefore, the notion of support for AHTs has instinctively been associated with supervision.

Participants communicated considerable value in a strong supervisory relationship. Supervisor attributes that were valued included significant experience in hand therapy, cultural understandings, the ability to support both professional and clinical aspects and placing the therapist at the centre of learning. Participants wanted a more meaningful supervisory relationship. They wanted someone who could provide support beyond the clinical area, who could relate to them and work collaboratively to provide guidance through their full AHT journey. Short et al. (2018) has also reported the importance of a supervisory relationship with an expert hand therapist in the development of AHTs. Furthermore, recognition of a more comprehensive supervision practice has also been found, with Stanton (2006) reporting that mentoring and collaborative relationships ensure that hand therapists maintain clinical competency.

Participants described how poor matching with supervisors led to difficulties and limitations in their training. Research shows the supervisor-supervisee match, and an ongoing reciprocal relationship are essential components of quality supervision and contribute to supervisee satisfaction (Cheon et al., 2009; Ducat et al., 2016; Holder et al., 2020; Redpath et al., 2015; Snowdon, Sargent, et al., 2020). Research also confirms the importance of the supervisee selecting their supervisor, with choice of clinical supervisor contributing to higher-quality supervision, enhancement in supervisory relationships and promoting positive clinical supervision outcomes (Holder et al., 2020; Martin et al., 2015; Redpath et al., 2015; Snowdon, Leggat, et al., 2020).

Participants also commented on the potential benefit of aligning cultures between the supervisor and supervisee. Māori and Pasifika participants in particular placed value on this alignment. They reported feeling more comfortable in their environment and more likely to engage with the support of someone from their own culture. Likewise,

when participants spoke of their time in a supervisor role, they felt more connected, understood, and able to help those of a similar culture. These findings are similar to those of Wallace and Ngapuhi (2019), who showed that Māori social workers valued and desired culturally aligned supervision. This alignment allowed social workers to receive the full support they required and felt was lacking with Western supervision models. In contrast, international research found that matching characteristics (including ethnicity) did not significantly affect supervisee satisfaction. Instead, supervisee satisfaction was related to strong and positive working alliances (Cheon et al., 2009). Furthermore, Soheilian et al. (2014) and Watkins and Milne (2014) found that focusing on improvements in cultural safety between supervisor and supervisee helped supervisee satisfaction more than cultural alignment. Despite the conflict between the findings of this study and those seen elsewhere, my findings suggest that there may be value in culturally aligning supervision in the Aotearoa context, particularly for Māori and Pasifika. Furthermore, asking supervisees their preferences before making a match would ensure no assumptions are made.

Limited access to experienced supervisors was also found to be a key factor restricting opportunities for AHTs to form good supervisor-supervisee relationships. Participants spoke about the benefit of receiving supervision from experienced therapists. This aligns with research by Short et al. (2018), who report that novice hand therapists gain their skills through the transmission of knowledge from an expert hand therapist. However, HTNZ report having limited access to experienced clinicians with the need for more experienced supervisors being accessible within the profession, especially in rural communities (Hand Therapy New Zealand, 2021b). The lack of experienced hand therapists is also a concern internationally, as with the mean age of global CHTs continuing to rise there is awareness of a potential loss of skill set as therapists head to retirement (Keller et al., 2016; Keller et al., 2021 (article in press)). Researchers have further recognised the necessity of experienced hand therapists in the support of training novice hand therapists. Expert hand therapists' skill sets and expertise are essential to pass to the next generation so both OTs and PTs can continue to provide hand therapy care (Colditz, 2011; Short et al., 2018; Stanton, 2006).

5.3 Support through isolation and inaccessibility

My findings showed that the support AHTs received was varied and often depended on their place of employment. With limited policies in place to regulate support, AHTs don't always receive enough support to feel safe in their abilities. This section discusses the accessibility of support and how the development of positive workplace support cultures can aid in building safe and competent AHTs.

It was surprising to find that geographical isolation did not appear to hinder access to support. Rurally based participants' reports of support were positive, compared to some participants who worked closely with experienced therapists in large clinics. These findings show that support was not conditional on geographic proximity, but rather the availability of the professional community. Participants found that when they were included in a community, they felt supported in their journey, safe in their practice, and experienced a sense of belonging in their work. Furthermore, participants valued workplaces that prioritised support and recognised the wellbeing of the therapist ahead of revenue.

Further inaccessibility was seen when supervision was provided by a supervisor who had a dual role or responsibility within the service, i.e., as a manager or colleague with a full case load. Participants felt hesitancy in accessing this support as they perceived themselves as a burden to their supervisor. These findings have been reported elsewhere, with researchers identifying limited access to support in dual role supervisors, especially when the supervisor was in a managerial role (Martin et al., 2015). Martin et al. (2015) argues when the provision of time for support was not provided this was a barrier to high-quality supervision and achieving positive outcomes. Furthermore, time for support was reported as less of a priority in busier settings associated with urban clinics (Martin et al., 2015).

When therapists have accessible support, this has been shown to improve the quality of the support (Martin et al., 2015). Research demonstrates that allied health access to support is dependent on workplace and organisation structures (Ducat et al., 2016; Holder et al., 2020; Martin et al., 2015). Furthermore, McCormack et al. (2011) suggest that access to support is dependent on workplace cultures that have developed an ongoing commitment to person-centred cultures providing personal and professional

growth in the organisation. A positive supervision culture is a critical factor in good supervision, and includes the effective use of technology to manage geographical barriers, finding time for supervision, valuing the role of supervision in improving patient care, organisational commitment to supervision and support for the supervisor (Ducat et al., 2016).

Effective and accessible support is found through the wider community and is individualised to each hand therapist. Reliance on supervision alone cannot provide the access nor the full holistic support each therapist requires. The culture of dependence on the singularity of supervision as the pinnacle of support should change. Aotearoa AHTs are diverse professionally and culturally, and with that they require better access to a broad range of supports that are prioritised, individualised and therapist centred. Furthermore, the culture of support needs to be present within the individual, organisational and system structures of hand therapy to improve the journey for all AHTs.

5.4 Implications and recommendations for practice

This study gave me the opportunity to explore in detail AHTs' experience of support. In keeping with the methodology that has informed this study (Thorne, 2016), I have made four recommendations drawing from my findings which can be transferred to practice and, I suggest, would improve support for AHTs. These recommendations relate to the broad spectrum of hand therapy (individual members, practices, organisations, and strategic partners), as they must be embedded throughout the profession's practices and regulations. This aligns with Wikaire and Ratima (2011) who suggest that a comprehensive approach involving individual, organisational, and system levels are required to make improvements in a healthcare workforce.

5.4.1 Recommendation 1 - Equity for OTs

Based on the findings of this research I recommend,

- That ACC recognise OT hand therapists' diagnostic abilities and give them autonomy in completing new patient consultations and ACC45 forms.
- To fully integrate and emphasise occupation-based models of care into the AUT HAUL paper.

- That HTNZ provide scholarship funding for research in occupation-based models of care in hand therapy.

The findings showed that there were systemic inequities for OT hand therapists. A widespread culture undervaluing the foundational knowledge of OTs has limited OT AHT employment opportunities and limited their practice abilities once they are employed. MacDermid (2019) reports that inclusion and promotion of minority groups in hand therapy is required to maintain the strength of the dual profession.

To further strengthen the involvement and value of occupational therapy and the standing of OT foundational knowledge, further research and education are needed into the integration of an occupation-based model of care into hand therapy (Burley et al., 2018; Colaianni & Provident, 2010; Fitzpatrick & Presnell, 2004). A recent systematic review by Collis et al. (2020) found that engagement in occupation-based activities resulted in favourable outcomes in upper extremity conditions. Yet, more credible evidence on patient populations was required to provide a solid foundation of knowledge for practice changes. To unlock the potential of hand therapy duality it is critical to value and strongly understand each discipline's worldview and what they bring to the practice of hand therapy.

5.4.2 Recommendation 2 - Equity for Māori and Pasifika

The following recommendation alongside all subsequent recommendations add to enhancing equity for Māori and Pasifika AHTs. It is important that when Māori and Pasifika are employed as AHTs, the systems and support structures help them to flourish as Māori and Pasifika.

- That AUT provide Māori and Pasifika scholarships to undertake the HAUL paper and the additional paper of relevance to complete the academic requirements for full hand therapy membership.

The findings showed an awareness of a lack of representation of both Māori and Pasifika hand therapists. This finding reflects the recognised low workforce numbers within the occupational therapy and physiotherapy professions of Māori and Pasifika (Physiotherapy Board of New Zealand, 2020; Stokes & Dixon, 2018). Low numbers have already been recognised, and research and effort has been placed into increasing the

Māori and Pasifika populations in the physiotherapy and occupational undergraduate programs throughout Aotearoa (Theodore et al., 2018). Scholarships have also been provided for Māori to complete tertiary health-related studies and contribute to the health workforce (Ratima et al., 2007). This recommendation supports these initiatives.

5.4.3 Recommendation 3 - Cultural safety

- That cultural safety is integrated in the AUT HAUL paper with learning outcomes and assessments.
- That a cultural safety category, focusing on reflection, is included in the HTNZ continuing education schedule.

Cultural safety has primarily been positioned as important for reducing inequities and power differentials between healthcare professionals and their patients (Curtis et al., 2019). However, cultural safety was extended in my findings as being essential for health professionals, particularly to improve support for Māori and Pasifika hand therapists. Palmer et al. (2019) recognised the priority of clinician cultural competencies in reducing inequities in health for Māori consumers.

Research has shown that non-Māori and non-Pasifika therapists should enhance their cultural safety by reflecting on their power and privilege and the biases and prejudices in their practices and organisational structures (Curtis et al., 2019; Main et al., 2006; Ratima et al., 2006). Furthermore, organisations need to focus on achieving health equity in their practices, with progress being measured and centred around holistic concepts of cultural safety rather than the limited concept of cultural competency that exists at present (Curtis et al., 2019). Significant work in this area is being undertaken and implemented by OTBNZ and PBNZ (Davis, 2021; Occupational Therapy Board of New Zealand, 2015b). However, alongside this, critical reflection opportunities for hand therapists also need to be installed to enhance their cultural capacity and to serve better the cultural needs of Māori and Pasifika hand therapists that they work alongside.

5.4.4 Recommendation 4 - Supervision

- Mandatory weekly supervision to all AHTs outside of ACC requirements. This supervision to be supplied by the employer from an external provider.
- The supervisor is chosen by the supervisee and cultural alignment between supervisor and supervisee should be accessible especially for Māori and Pasifika.

Participants reported difficulties in developing strong supervision relationships due to a lack of experienced hand therapists, supervision being provided in-house, and not easily accessible. In cases where access to supervisors is limited, research has found interprofessional supervision as a successful alternative (Davys & Beddoe, 2009). Further to this, Māori and Pasifika participants found value in culturally aligning their supervision which could be accomplished through external supervision providers.

5.5 Strengths and limitations

The strengths and limitations of this research are discussed by addressing four key aspects of design and methods. These strengths include having a broad diversity of perspectives, the accessibility of participation, effective cultural analysis, and my insider positionality.

5.5.1 Diversity of perspectives

A major strength of this robust Interpretive Description study was the extent to which a diversity of perspectives was achieved. Perspectives were gained from a broad and diverse range of hand therapists who had trained in Aotearoa. These perspectives included participants of differing age, gender, ethnicity, undergraduate qualification, stage of registration, level of hand therapy experience, level of qualification, geographical area of work, and type of employer (government or private). Additionally, inclusion criteria were amended to include Pasifika hand therapists' perspectives, as this perspective was missing initially.

However, despite hearing the perspectives of a wide range of hand therapists, the perspectives from healthcare professionals working alongside hand therapists were still missing. Stanton (2006) highlighted the close cooperative working relationships between surgeons and hand therapists and the importance surgeons felt in being

assured competent hand therapists were treating the patients they referred. Therefore, the perspectives of surgeons could have added a further critical lens to this study.

5.5.2 Participant accessibility

All participants were interviewed through the online video consultation application of Zoom, which provided access and convenience. Online interviewing has been shown to improve access by limiting the impact on geographically remote participants (Archibald et al., 2019).The accessibility and convenience of online interviewing allowed interviews to occur while the participant was at home (or for one participant, while they were in their car) and not encroach into their working environment.

Some research reports limitations to non-in-person interviewing, describing in-person interviewing as the optimal method for obtaining qualitative data (Johnson et al., 2019). However, Krouwel et al. (2019) and Johnson et al. (2019) compared in-person and online interview methods and found only slight benefits in the depth of data generated during the analysis process of in-person interviews when compared to telecommunication methods. Similarly, Renõsa et al. (2021) found that telecommunication interviewing provided broad and rich communication from participants who could effectively work the online systems.

The addition of in-person interviewing could allow a slight increase in the depth of data generated. Where geographically practical, participants were given the choice of an in-person interview, but all elected to participate via Zoom. This participant preference perhaps highlights the priority afforded to the convenience and comfort of online interviews and the Zoom program following its increased use over the course of the COVID-19 pandemic.

5.5.3 Effective cultural analysis

As a novice Pākehā researcher, I recognised my limitations in accessing and interpreting the voices of Māori and Pasifika participants. To overcome this and ensure this research was inclusive of Māori and Pasifika, I sought multiple and comprehensive avenues of cultural consultation.

Francis and Carryer (2019) found that ongoing cultural consultation by a tauiwi (non-Māori) health researcher led to a culturally responsive research space for Māori participants. This consultation enabled Māori to maintain their mana, ensure their voices were heard, and feel included, understood, and well represented in the research findings. In contrast, Brewer et al. (2014) found that Kaupapa Māori research was required to analyse power and societal inequities effectively, which, when not used, could lead to findings that further justify current inequitable methods. As such, although attention was given to amplifying Māori and Pasifika voice and ensuring beneficial outcome for these groups, further insights could be gained through Māori or Pasifika researchers using Kaupapa Māori or Talanoa (Pasifika based research) methodologies.

5.5.4 Insider analysis

A further key strength within this research is the 'insider' positionality that I held as an experienced hand therapist who has experiences and perspectives of being an AHT in Aotearoa and supervising AHTs in their journey. Additionally, I have been the Secretary for HTNZ since 2019 and have increased my understandings of the processes and procedures of hand therapy at an organisational level through this role.

The Interpretive Description methodology highlights and empowers insider positionality, as experiences and perspectives build the scaffolding of the research (Thorne, 2016). Wilkinson and Kitzinger (2013) report that researchers are always partly 'insiders' through any similarities of experience or community shared with the research participants. Insider privilege can allow more straightforward access to information, knowledge of issues affecting the participants, stimulate trust, and enhance the ability to show empathy (Thorne, 2016; Wilkinson & Kitzinger, 2013).

However, there are limitations of being an 'insider' in a research setting which include potential power imbalances and the possibility of the participants restricting the sharing of information (Merriam et al., 2001; Thorne, 2016). As an insider researcher, it is essential to constantly consider and practice reflection of presumptions and biases of the individual and the profession (Hunt, 2009). To forefront my biases, I undertook a presupposition interview which highlighted inherent biases and assumptions I was

bringing into the research. I also had ongoing discussions with my supervisors which helped to challenge my thinking.

Although an insider positionality was provided in this research, outsider insights are also important and could add additional insights.

5.5.5 Increasing hand therapy knowledge

This study addresses an area of limited research regarding support for AHTs in Aotearoa. Few research studies have explored support needs for Aotearoa therapists' training in new areas of practice. In addition to the literature review, I reviewed grey literature to add important understandings and ensure relevant documents were found (Thorne, 2016). Although this research was limited by being one of the first to study supports relating to hand therapy, it shows a need for research in this area, with this research beginning to build a body of knowledge to fit this gap.

5.6 Recommendations for further research

Recommendations for further research highlight some opportunities for further advance knowledge in the field. Thorne (2016) recommends that the most helpful research recommendations orient around the initial research questions and "reflect an awareness of the limitations of your study approach and the advantages that other methods or designs might afford" (p. 193). This Interpretive Description study has provided insight into the current support needs of Aotearoa AHTs. To further increase knowledge and expand our understandings of the findings from this study, further research could address:

1) Development and investigation of therapist-led models of support in hand therapy training
2) Examination of hand therapy workplace culture in the development of effective therapist support.
3) Examination of the support needs of Māori AHTs through a Kaupapa Māori methodology, and examination of the support needs of Pasifika AHTs through a Talanoa methodology.
4) Investigation into the experiences and perspectives of Māori and Pasifika therapists following the cultural alignment of supervision.

5) Investigation into the development of minority groups within the dominant PT hand therapy culture, specifically the development of OT, Māori, and Pasifika hand therapists through the integration of biopsychosocial (occupation-based) and Te Ao Māori models of care.
6) Examination of the experiences and perspectives of Plastic and Reconstructive Surgeons working closely with AHTs.

5.7 Conclusion

Good support enhances the development of safe, competent, and responsive AHTs. Research has established the benefits of supervision for health practitioners, but evidence regarding support for training hand therapists within Aotearoa is scarce. This study is the first to delve into the experiences of AHTs in Aotearoa and has identified several factors that have positive and negative influences on AHT support. Furthermore, my findings highlight several challenges for AHTs and hand therapy practise that can, and should, be addressed. Most notably, the lack of diversity within hand therapy and the multilayer inequities that continue to enable the dominance of a Pākehā, biomedical, physiotherapy worldview within the profession. Strengthening support mechanisms for OT, Māori, and Pasifika AHTs who experience barriers to accessibility alongside other inequities could lead to meaningful change for the profession and patients. Simple changes, such as the recognition of OT skills by ACC and the provision of holistic support and culturally aligned supervision, especially for Māori and Pasifika therapists, could resolve some of these barriers, improve support, and enhance hand therapy practice in Aotearoa.

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Glossary

This glossary contains additional information around organisations and vocabulary from te Reo Māori and ganaga Samoa that appear in the thesis.

Organisation

Tae Ora Tinana	The official Māori partner of PNZ representing Māori physiotherapists, Māori physiotherapy students, and Māori physiotherapy assistants and advocating for hauora and tikanga within the physiotherapy profession.

Māori word/phrase	**English translation**
Aotearoa	The Māori name for New Zealand
Hauora	Be fit, well, healthy, vigorous, in good spirits
Hui	To gather, congregate, assemble, meet
Kaitiakitanga	Guardianship, stewardship, trusteeship, trustee
Karakia	To recite ritual chants, say grace, pray, recite a prayer, chant
Kaupapa Māori	Māori approach, Māori customary practice, Māori institution, Māori agenda, Māori principles, Māori ideology- a philosophical doctrine, incorporating the knowledge, skills, attitudes, and values of Māori society
Koha	Gift, present, offering, donation, contribution- especially one maintaining social relationships and has connotations of reciprocity
Kōrero	To tell, say, speak, read, talk, address
Mana	Prestige, authority, control, power, influence, status, spiritual power, charisma- mana is a supernatural force in a person, place, or object
Manaakitanga	Hospitality, kindness, generosity, support- the process of showing respect, generosity, and care for others
Pākehā	English, foreign, European, exotic- introduced from or originating in a foreign country

Pepeha	Pepeha is a way of introducing yourself in Māori. It tells people who you are by sharing your connections with the people and places that are important to you
Tauiwi	People who are not Māori, especially non-indigenous New Zealanders
Te Ao Māori	The Māori worldview
Te Reo Māori	The Māori language
Te Tiriti o Waitangi	The Treaty of Waitangi
Tikanga	Correct procedure, custom, habit, lore, method, manner, rule, way, code, meaning, plan, practice, convention, protocol- the customary system of values and practices that have developed over time and are deeply embedded in the social context
Waiora	Health, soundness
Whakawhanaungatanga	Process of establishing relationships, relating well to others
Whanaungatanga	Relationship, kinship, sense of family connection- a relationship through shared experiences and working together which provides people with a sense of belonging

Samoan word/phrase	**English translation**
Talanoa	A Pacific research methodology.

Appendices

Appendix A: Auckland University of Technology Ethics Committee approval letter

Auckland University of Technology Ethics Committee (AUTEC)

Auckland University of Technology
D-88, Private Bag 92006, Auckland 1142, NZ
T: +64 9 921 9999 ext. 8316
E: ethics@aut.ac.nz
www.aut.ac.nz/researchethics

27 July 2020

Nicola Kayes
Faculty of Health and Environmental Sciences

Dear Nicola

Ethics Application: 20/223 **Hand therapists' experiences and perspectives about professional support in hand therapy training**

We advise you that a subcommittee of the Auckland University of Technology Ethics Committee (AUTEC) has **approved** your ethics application.

This approval is for three years, expiring 27 July 2023.

Non-Standard Conditions of Approval

1. Remove the counselling provision from the Information Sheet;
2. Should the funding application from Hand Therapy New Zealand be successful, inclusion of this in the Information Sheet.

Non-standard conditions must be completed before commencing your study. Non-standard conditions do not need to be submitted to or reviewed by AUTEC before commencing your study.

Standard Conditions of Approval

1. The research is to be undertaken in accordance with the Auckland University of Technology Code of Conduct for Research and as approved by AUTEC in this application.
2. A progress report is due annually on the anniversary of the approval date, using the EA2 form.
3. A final report is due at the expiration of the approval period, or, upon completion of project, using the EA3 form.
4. Any amendments to the project must be approved by AUTEC prior to being implemented. Amendments can be requested using the EA2 form.
5. Any serious or unexpected adverse events must be reported to AUTEC Secretariat as a matter of priority.
6. Any unforeseen events that might affect continued ethical acceptability of the project should also be reported to the AUTEC Secretariat as a matter of priority.
7. It is your responsibility to ensure that the spelling and grammar of documents being provided to participants or external organisations is of a high standard and that all the dates on the documents are updated.

AUTEC grants ethical approval only. You are responsible for obtaining management approval for access for your research from any institution or organisation at which your research is being conducted and you need to meet all ethical, legal, public health, and locality obligations or requirements for the jurisdictions in which the research is being undertaken.

Please quote the application number and title on all future correspondence related to this project.

For any enquiries please contact ethics@aut.ac.nz. The forms mentioned above are available online through http://www.aut.ac.nz/research/researchethics

(This is a computer-generated letter for which no signature is required)

The AUTEC Secretariat
Auckland University of Technology Ethics Committee

Cc: Gfk3650@autuni.ac.nz; dobrien@aut.ac.nz

Appendix B: Auckland University of Technology Ethics Committee amendment approval letter

Auckland University of Technology Ethics Committee (AUTEC)

Auckland University of Technology
D-88, Private Bag 92006, Auckland 1142, NZ
T: +64 9 921 9999 ext. 8316
E: ethics@aut.ac.nz
www.aut.ac.nz/researchethics

6 November 2020

Nicola Kayes
Faculty of Health and Environmental Sciences

Dear Nicola

Re: Ethics Application: **20/223 Hand therapists' experiences and perspectives about professional support in hand therapy training**

Thank you for your request for approval of amendments to your ethics application.

The minor amendments to the inclusion criteria have been approved.

I remind you of the **Standard Conditions of Approval**.

1. The research is to be undertaken in accordance with the Auckland University of Technology Code of Conduct for Research and as approved by AUTEC in this application.
2. A progress report is due annually on the anniversary of the approval date, using the EA2 form.
3. A final report is due at the expiration of the approval period, or, upon completion of project, using the EA3 form.
4. Any amendments to the project must be approved by AUTEC prior to being implemented. Amendments can be requested using the EA2 form.
5. Any serious or unexpected adverse events must be reported to AUTEC Secretariat as a matter of priority.
6. Any unforeseen events that might affect continued ethical acceptability of the project should also be reported to the AUTEC Secretariat as a matter of priority.
7. It is your responsibility to ensure that the spelling and grammar of documents being provided to participants or external organisations is of a high standard.

AUTEC grants ethical approval only. You are responsible for obtaining management approval for access for your research from any institution or organisation at which your research is being conducted. When the research is undertaken outside New Zealand, you need to meet all ethical, legal, and locality obligations or requirements for those jurisdictions.

Please quote the application number and title on all future correspondence related to this project.

For any enquiries please contact ethics@aut.ac.nz. The forms mentioned above are available online through http://www.aut.ac.nz/research/researchethics

(This is a computer-generated letter for which no signature is required)

The AUTEC Secretariat
Auckland University of Technology Ethics Committee

Cc: Gfk3650@autuni.ac.nz; dobrien@aut.ac.nz

Appendix C: Research advertisement

Interview Participants Wanted

Hand Therapists' experiences and perspectives of support in hand therapy training

An Invitation
Tēnā koe, I am Josie Timmins and I am inviting you to take part in a research project that I am completing as part of my Master of Health Science thesis through Auckland University of Technology.

Aim
The purpose of this research is to learn from the experiences of current and past associate hand therapists to inform improvements in the support available to associate hand therapists. I want to learn from hand therapists, in their words, about their experiences of support when becoming a hand therapist.

The literature around hand therapist development is scarce. The Physiotherapy Board of New Zealand and the Occupational Board of New Zealand recognise the importance of support for therapist competency and when therapists change their field of practice or specialise within a new area. However, what support is received and needed is unknown. I intend using the findings to propose guidelines to Hand Therapy New Zealand, Occupational Therapy New Zealand, Physiotherapy New Zealand, the Occupational Therapy Board of New Zealand and the Physiotherapy Board of New Zealand around support for developing hand therapists.

I would love to talk to you if you are:

- A New Zealand associate hand therapist with at least one year of training OR a
- Hand therapist (full member of HTNZ) who completed their full hand therapy training in New Zealand
- Living in New Zealand

If you agree to take part, you will be invited to share your experiences and perspectives in a one-off interview which will be conducted online (e.g. via zoom) or in person (if preferred and logistically viable). The interview will be between 45 to 90 minutes. Following your interview, I will invite you to review a summary of your transcript to ensure I have captured your key points (20 to 30 minutes).

Following your interview and follow-up you will be sent a small token (*koha*) of appreciation. Travel costs will be reimbursed with a petrol voucher for any travel required to attend an interview.

Please Get in Touch
Please contact me for further information, if you have any questions or concerns, or if you would like to contribute to the research.

Ethics approval has been granted through Auckland University of Technology Ethics Committee 20/223

Josie Timmins gfk3650@autuni.ac.nz, 021991870

Appendix D: Participant information sheet

Participant Information Sheet

Date Information Sheet Produced:

September 2020 (updated November 2020)

Project Title

Hand Therapists' experiences and perspectives of support in hand therapy training

An Invitation

Tēnā koe,

My name is Josie Timmins and I am a hand therapist and physiotherapist. I am inviting you to take part in a research project that I am completing as part of my Master of Health Science thesis through the Auckland University of Technology (AUT).

The aim of this study is to develop an understanding and insight into hand therapists' experiences of supports during their time as associate hand therapists (AHT).

Whether you choose to participate or not will neither be an advantage nor disadvantage to you. Your agreement to take part in this study would be greatly appreciated.

What is the purpose of this research?

The purpose of this research is to learn about the experiences of current and past AHT to inform improvements in the future support of AHT in their development into hand therapists. I want to learn from hand therapists, in their words, about their experiences of supports while associate hand therapists. I would like to reassure you that this research is not looking for your content knowledge on hand therapy or support, only your experiences of it.

The literature around hand therapist development is scarce. There are concerns in the hand therapy community around accessible supervision and a gap in the literature reflecting mid-career specialisation. I intend using the findings to propose guidelines to Hand Therapy New Zealand (HTNZ), Occupational Therapy New Zealand Whakaora Ngangahau Aotearoa (OTNZ-WNZ), Physiotherapy New Zealand (PNZ), the Occupational Therapy Board of New Zealand (OTBNZ) and the Physiotherapy Board of New Zealand (PBNZ) around support for training hand therapists. The findings of this research may also be used for academic publications and presentations.

How was I identified and why am I being invited to participate in this research?

A request was made to HTNZ to advertise through their membership via e-mail, Facebook and special interest group meetings asking for your involvement in a research project. You have responded as a current member of HTNZ.

Participants in this study will need to be New Zealand hand therapists who are currently associate hand therapists (with at least three months of experience) OR registered hand therapists who have completed their full hand therapy training in New Zealand.

Unfortunately, participants who currently have a professional working relationship with me (Josie Timmins) will be excluded from this study.

How do I agree to participate in this research?

I would be pleased if you would agree to be part of the research and part of an interview. I hope to individually interview eight to 12 participants to gather deep and valuable information. However, if the number of volunteers exceeds my target number of participants, I will need to select a range of volunteers who represent the diversity of hand therapists in New Zealand. In other words, I am hoping to recruit participants who range in age, gender, ethnicity, undergraduate qualification, stage of registration, level of hand therapy experience, level of qualification, geographical area of work and type of employer.

I would really appreciate hearing about your experiences. However, your participation in this research is voluntary (it is your choice) and whether or not you choose to participate will neither advantage nor disadvantage you. You can withdraw from the study at any time. If you choose to withdraw from the study, then you will be offered the choice between having any data that is identifiable as belonging to you removed or allowing it to continue to be used. However, once the findings have been produced, removal of your data may not be possible.

If you agree, please fill in the consent form and demographic sheet provided within two weeks of receiving the participant information sheet. This can be e-mailed directly to me. If you have any questions, please feel free to contact me at any time (gfk3650@autuni.ac.nz, 021991870).

What will happen in this research?

I would like you to participate in one recorded interview. The interview will be conducted online (e.g. via zoom) or in person if that is preferred and logistically viable.

I will contact you to arrange a time when you are available for 45 to 90 minutes for us to speak together. I will send you a copy of the interview questions as a guide. This will allow you time to think about how you might answer some of the questions.

Following your interview, you will be contacted again (within 7 days) to review a summary of your transcript. This summary will be provided to you via e-mail or post. You will be invited to review your transcript summary and confirm that the ideas presented are consistent with how you intended them or to make any changes you feel necessary. This process helps ensure my analysis remains true to the perspectives you have shared.

I ask that you notify me within 7 days of receiving the transcript and analysis of any amendments you are wanting to make.

What are the discomforts and risks?

You may feel concerned about being identified via your interview recordings. For example, you might be concerned that participation will reflect badly on your own practice or that of the place you work. You may also be concerned about exposing your identity via your demographics to the hand therapy community during the dissemination phase of this research project.

How will these discomforts and risks be alleviated?

I would like to reassure you that there are no right or wrong answers. I am interested in your personal experiences and perspectives and I won't be making judgements about your practice. You will not be identifiable through your interviews, report, or any dissemination of this research. Your recordings will remain confidential to myself, my supervisors, and a contracted transcriber who will be bounded by a confidentiality agreement.

I will not use your name, the name of your place of work or any identifying demographic information within the report.

What are the benefits?

There is no direct benefit in participating in this research. However, if you choose to participate, you will be offered a token of appreciation (*koha*) sent to you following the completion of your interview.

This research may be beneficial to other occupational therapists or physiotherapists who chose to work towards their full hand therapy membership. This research may also serve to provide organisations such as the OTBNZ, PBNZ, HTNZ, OTNZ-WNA, PNZ, District Health Boards and private practices to improve their understanding and support of developing hand therapists. Lastly, this research will contribute to my Master of Health Science qualification.

How will my privacy be protected?

Confidentiality will be upheld using a participant number or pseudonym and ensuring any identifying information is deleted or disguised. My supervisors and I will have access to the data during both the data collection and analysis stages. A contracted transcriber will have access to data for transcription purposes only and will have signed a confidentiality agreement.

All data will be kept securely for a minimum of at six years, after which it will be destroyed.

What are the costs of participating in this research?

Aside from giving up your time, there are no costs associated with taking part in this research. The time involved will consist of 20 minutes to read this information sheet and complete the consent form and demographic sheet, a 45 to 90-minute interview at your convenience as well as your review of a follow-up summary of your interview (20 to 30 minutes). An estimated total of 1.5 to 2.5 hours.

What opportunity do I have to consider this invitation?

Participants are encouraged to contact me within two weeks of receiving this information sheet.

Will I receive feedback on the results of this research?

A summary of findings may be sent to participants via email if they wish. You can indicate whether you would like to receive this on the consent form.

What do I do if I have concerns about this research?

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Professor Nicola Kayes, nkayes@aut.ac.nz, +64 9 921 9999 ext 7309

Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTEC, *ethics@aut.ac.nz* , (+649) 921 9999 ext 6038.

Funding

A research scholarship has been awarded by Hand Therapy New Zealand to cover costs associated directly with the research.

Whom do I contact for further information about this research?

Please keep this Information Sheet and a copy of the Consent Form for your future reference. You are also able to contact the research team as follows:

Researcher Contact Details:

Josie Timmins
gfk3650@autuni.ac.nz
021991870

Project Supervisor Contact Details:

Professor Nicola Kayes, nkayes@aut.ac.nz, +64 9 921 9999 ext 7309

Dr. Daniel O'Brien, daniel.obrien@aut.ac.nz, +64 9 921 9999 ext 8707

Appendix E: Consent form

Consent Form

Project title

Hand therapists' experiences and perceptions of support in hand therapy training

Project Supervisors

Professor Nicola Kayes

Dr. Daniel O'Brien

Researcher

Josie Timmins

- I have read and understood the information provided about this research project in the Information sheet dated September 2020.
- I have had an opportunity to ask questions and to have them answered.
- I understand that notes will be taken during the interviews and that they will also be audio-taped and transcribed.
- I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time without being disadvantaged in any way.
- I understand that if I withdraw from the study then I will be offered the choice between having any data that is identifiable as belonging to me removed or allowing it to continue to be used. However, once the findings have been produced, removal of my data may not be possible.
- I agree to take part in this research.
- I wish to receive a summary of the research findings (please tick one): Yes○ No○

Participants signature: .....

Participants name: .....

Participants contact details:

.....

.....

.....

Date:

Appendix F: Demographic sheet

Demographic Sheet

Please fill out the information below and return it with your consent form.

Participant Name:

Age:

Gender:

Ethnicity:

Undergraduate Qualification: (*occupational therapy/ physiotherapy*)

Highest Level of Qualification:

Stage of Registration: *(Associate- how many years, Registered- how many years)*

Hand Therapy Experience:

Geographical area of work: *(Urban/ Rural)*

Type of Employer: *(DHB/ Private Practice/ Self/ Practice Owner)*

Appendix G: Pasifika Physiotherapy Association advertisement

From: Pasifika Physio <pasifika.physio@gmail.com>
Sent: Wednesday, 21 October 2020 7:13 PM
Cc: Josie Timmins <gfk3650@autuni.ac.nz>
Subject: In search of Pasifika Hand Therapists

Talofa colleagues,

Let me introduce you to Josie Timmins, an excellent Hand Therapist and Physiotherapist based in Wellington and of Samoan descent. Josie is looking to recruit Pasifika Hand Therapists into a study she is conducting towards her Masters degree at AUT. Please find more information about her study attached below.

If you know of any Pasifika Hand Therapists in your network, please forward this information to them and encourage them to get in touch with Josie.

The more we can feature positively in our profession's literature, the better our profession can support our unique needs and recognise our unique strengths.

Ia manuia,
Oka
--
Pasifika Physiotherapists Association

Appendix H: Interview question guide

Interview Question Guide

A bit about you

Can you tell me about how and why you became involved in hand therapy?

Tell me about your current role in hand therapy

A bit about your workplace

Tell me about your place of work during your time as an AHT
What support did you receive?

What support is/was available at your workplace? (Orientation/ Training/ Continuing Professional Development/ Supervision/ Mentorship/ Funds)

Does the support differ between your time as an AHT and what you see happening now?

What process did you go through to gain a registered hand therapist supervisor?

If you need help with a patient, what/where could you seek help?

Reflecting on where things are at

Thinking of your time as an AHT and the support you received- What is working/ worked well? What are things that you and your team are proud of?

What aligned with your cultural worldview? What clashed with your cultural worldview? Did you feel like your cultural worldview was supported?

What are/were the challenges?

What have you learnt along the way? Is there anything you would want to change for new AHT coming into the profession?

Telehealth

Do/Did you provide telehealth appointments during the COVID-19 pandemic?

What did the support look like during this time?

What worked well? What didn't work well?

Practice owners

Can you tell me about the support provided for your staff?
Can you tell me about the challenges around provision of support?

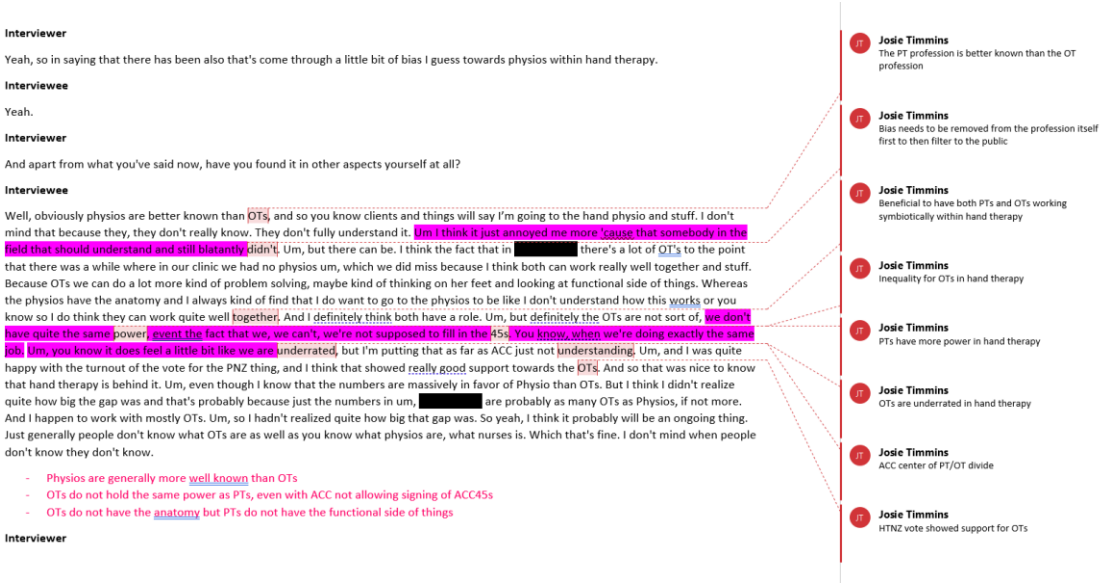
Other

Is there anything else you would like to say about professional support for AHT?

Appendix I: Post-interview prompt sheet

Post interview summary
Overall feeling of the interview: positive/ negative/ how did it make me feel?
How do I think the interviewee felt? Do I think there were ideas left unsaid?
Key points that I feel stood out that related to the research questions
What were the tangent ideas that developed? Why were they mentioned?
How was my questioning? What could I have asked more about? What did I feel didn't go well with my questioning?
Initial analysis during first listening and transcription
What are the main/ key ideas relating to the research questions?
What are the key ideas (regardless if they relate to the research questions)?
What was said that I expected? What was said that I didn't expect? What was not said that I expected to be said?
How do I feel about this statement?
If I disagree, why do I feel this way? and why do I believe the participant feels the way they do?
How did the participant respond to answering some of the more challenging questions?
How did the participants story develop over the course of the interview?
After progressing through the interviews
How does this statement agree or disagree with previous statements?
How does this statement add to the previous thoughts on this topic?
Is there any information I need to research to better understand this view (through own research or questioning in further interviews)?

Appendix J: Sample of coding



Interviewer

Yeah, so in saying that there has been also that's come through a little bit of bias I guess towards physios within hand therapy.

Interviewee

Yeah.

Interviewer

And apart from what you've said now, have you found it in other aspects yourself at all?

Interviewee

Well, obviously physios are better known than OTs, and so you know clients and things will say I'm going to the hand physio and stuff. I don't mind that because they, they don't really know. They don't fully understand it. Um I think it just annoyed me more 'cause that somebody in the field that should understand and still blatantly didn't. Um, but there can be. I think the fact that in [redacted] there's a lot of OT's to the point that there was a while where in our clinic we had no physios um, which we did miss because I think both can work really well together and stuff. Because OTs we can do a lot more kind of problem solving, maybe kind of thinking on her feet and looking at functional side of things. Whereas the physios have the anatomy and I always kind of find that I do want to go to the physios to be like I don't understand how this works or you know so I do think they can work quite well together. And I definitely think both have a role. Um, but definitely the OTs are not sort of, we don't have quite the same power, event the fact that we, we can't, we're not supposed to fill in the 45s. You know, when we're doing exactly the same job. Um, you know it does feel a little bit like we are underrated, but I'm putting that as far as ACC just not understanding. Um, and I was quite happy with the turnout of the vote for the PNZ thing, and I think that showed really good support towards the OTs. And so that was nice to know that hand therapy is behind it. Um, even though I know that the numbers are massively in favor of Physio than OTs. But I think I didn't realize quite how big the gap was and that's probably because just the numbers in um, [redacted] are probably as many OTs as Physios, if not more. And I happen to work with mostly OTs. Um, so I hadn't realized quite how big that gap was. So yeah, I think it probably will be an ongoing thing. Just generally people don't know what OTs are as well as you know what physios are, what nurses is. Which that's fine. I don't mind when people don't know they don't know.

- Physios are generally more well known than OTs
- OTs do not hold the same power as PTs, even with ACC not allowing signing of ACC45s
- OTs do not have the anatomy but PTs do not have the functional side of things

Interviewer

Josie Timmins
The PT profession is better known than the OT profession

Josie Timmins
Bias needs to be removed from the profession itself first to then filter to the public

Josie Timmins
Beneficial to have both PTs and OTs working symbiotically within hand therapy

Josie Timmins
Inequality for OTs in hand therapy

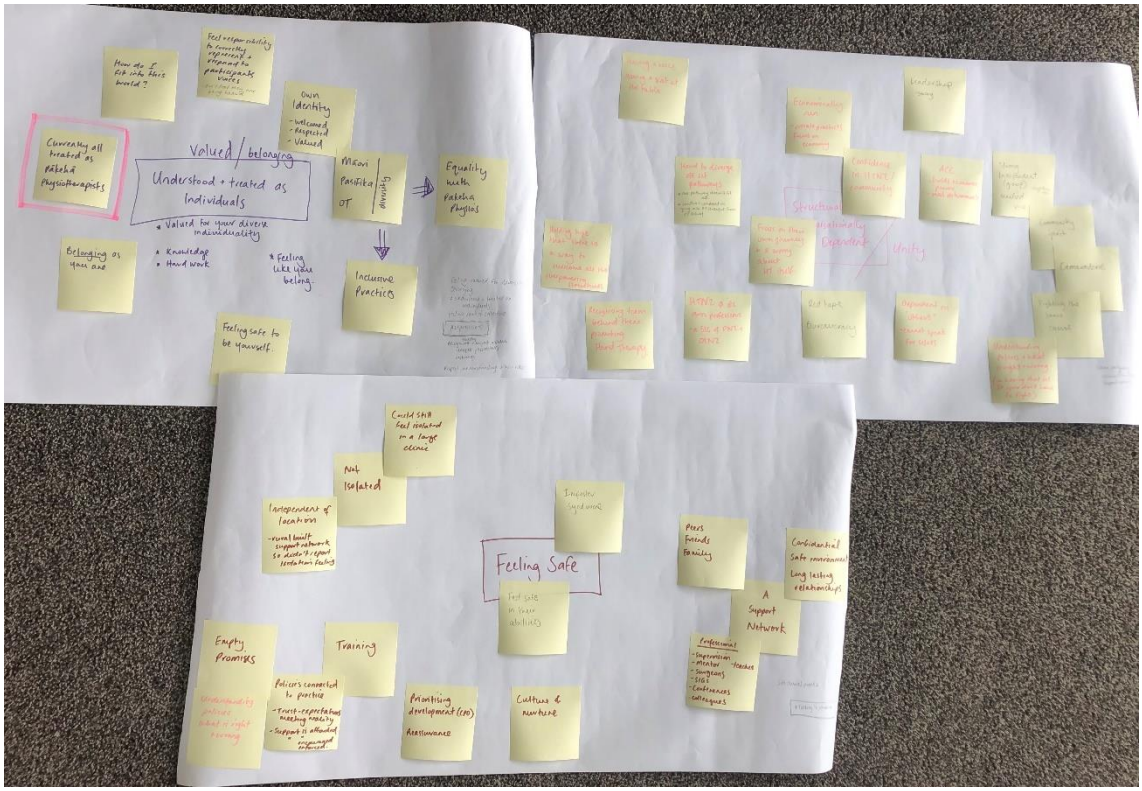
Josie Timmins
PTs have more power in hand therapy

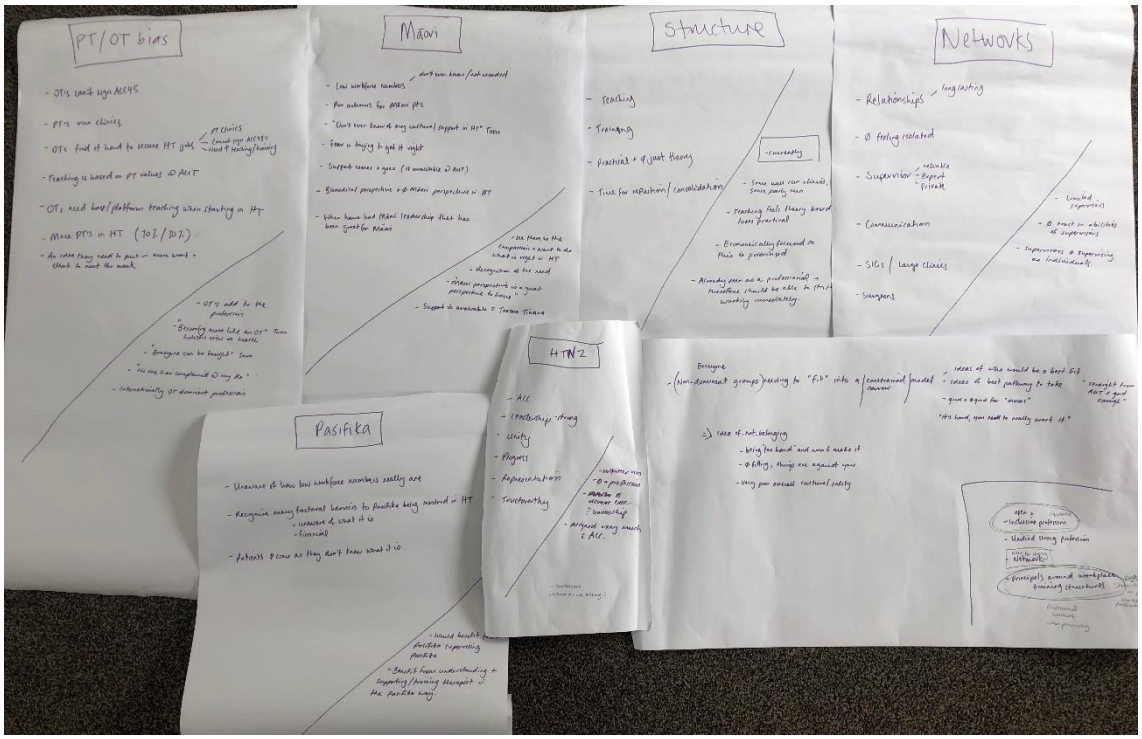
Josie Timmins
OTs are underrated in hand therapy

Josie Timmins
ACC center of PT/OT divide

Josie Timmins
HTNZ vote showed support for OTs

Appendix K: Sample of thematic analysis





Appendix L: Thoughtful clinician test theme summary

Tēnā koe,

I undertook this study to explore the experiences and perspectives of hand therapists regarding the support they receive as AHTs. I aimed to discover what supports are provided, how they are experienced, and how they can be improved.

The research is situated within a qualitative methodology called interpretive description. This methodology is focused around producing clinically applicable findings. With this, comes the responsibility of ensuring findings that are presented or published are creditable and trustworthy so they can be directly used in hand therapy practice.

A final aspect of ensuring credibility and trustworthiness (the rigor of qualitative research) is through a type of peer-review termed the thoughtful clinician test. I have asked three hand therapists (you included) who I believe are experts in the field to review my findings and to please provide me with some honest feedback. You have been chosen as an 'expert' due to your long and involved engagement in hand therapy and your ability to understand the context in which these findings sit within. This helps ensure that the information I provide back to Aotearoa hand therapists is relevant and goes towards improving the status of support for our AHTs.

Twelve participants were interviewed, and reflexive thematic analysis was used to develop the four themes; Theme 1- *Recognising and valuing the diversity of Aotearoa hand therapy*; Theme 2- A *therapist-centred approach to learning*; Theme 3- *An accessible community*; Theme 4- *Hand therapy as a united professional body.*

A brief overview of each theme with aligning quotes is provided. At the end of these theme overviews are a set of four questions for you to reflect upon and provide feedback. Again, this helps me ensure that the findings I eventually disseminate are applicable to Aotearoa AHTs. Please feel free to contact me if you have any questions or comments (gfk3650@autuni.ac.nz). If you could return the e-mail with your feedback within the next two weeks that would be greatly appreciated.

Thank you for taking the time to do this.
Kia ora rawa atu

Theme 1: Recognising and valuing the diversity of Aotearoa hand therapy

This theme represents the disciplinary and cultural biases perceived and experienced by participants- especially OTs, Māori, and Pasifika. Participants reported that OT trained AHTs routinely experienced operational and professional barriers which hindered their sense of worth and practice development. The barriers are widespread throughout the profession and ingrained into the culture of the practice. The barriers included a significant PT dominance of workforce numbers and a view of hand therapy as aligning more with the physiotherapy rehabilitation practice. Supporting the removal of this inequity through recognising and valuing what the OT profession brings to hand therapy will allow OT AHTs to fully engage with their identity and practice. It will help support the removal of a culture of practice inadequacy and inferiority placed on OT hand therapists and improve the overall OT AHT journey.

> "I have found it really hard as an OT, ah, to, to get into the hand therapy world because it is very…there is a degree of discrimination within the industry.

> There totally is, whether they [PTs] mean for it to be that way or not. There just is. And that is the culture I think." (#1 OT).
> "It isn't a physio biased position [profession]. But I think what it is, is that um ACC has made it as such" (#4 OT)

Cultural biases were also reported for Māori and Pasifika participants who alongside very low workforce numbers found difficulties using their own identities in hand therapy practice. Professionally, Māori and Pasifika work within a Western biomedical health model of care which limits their ability to fully engage and bring their whole selves to their practice. Even though, Aotearoa hand therapists reported eagerness to learn and develop themselves culturally this was difficult to obtain. To improve the equity and journey of Maori and Pasifika hand therapists there is an understanding that cultural support needs to be available for all.

> "I don't know if I'm aware of any cultural hand therapy stuff, to be honest." (#8 PT)

> "I don't want something that segregates, I want something that shows everybody that a Māori perspective is a great perspective to have in healthcare." (#3 PT/ Māori)

Theme 2- A therapist-centred approach to learning

This theme presents the perspectives and experiences of participants during their time training as new AHTs. Varied and generic clinical learning was described and meant uncertainty and insecurity for AHTs in the early stages of their practice. However, participants reported a therapist-centred approach to learning with clinical exposure and training helped them to feel secure, capable, and supported in their developing knowledge and skills.

This theme focused on the therapist at the centre of their learning and training rather than providing a training program structure in which clinics could follow. Although, there were many aspects of training that were similarly viewed as important, it was the differences in learning styles and the essence of seeing each AHT as an individual, needing to learn at their own pace that formed the theme.

> "So, I think you need to then be flexible in the delivery. So even though there are guidelines, you need to evaluate that person. Go, 'where is their need?'" (#2 PT/ Rural)

> "Well, it went on for as long as you felt you needed it to go on for and that was another good factor, is if you still didn't feel confident, they continued to provide that support." (#1 OT)

Theme 3- An accessible community

Participants reported accessible community networks were needed to help AHTs in achieving their personal and professional goals. Participants highlighted the need for long-lasting, trusting relationships and connections. They further reported the difficulties faced by AHTs working outside of large clinics and the necessity of developing and nurturing connections individualised to their needs locally and in the wider hand therapy community. Hand therapists reported feeling safe in communities that were easily accessible. They suggested that they can further develop their practices by having relationships and connections and successfully integrating into the hand therapy community.

> "Informally, yeh just sort of phone calls or texts and stuff to um, to therapists or surgeons. Um, I've been invited to the local sort of physio um group. Um, the OTs at the hospital are very supportive." (#9 OT/ Rural)
> "It's really nice to know that you've come through a pathway and for us now, you know, um, you know it's [many] years of turning up and seeing the same therapist at conferences and talking with them and asking them and listening, and you know and, and that's a support network, and I think that's equally as important for learning." (#6 PT)

Theme 4- Hand therapy- a united professional body

Theme 4 presents the current standing of the hand therapy field of practice, the barriers to unity and the development of a professional identity of hand therapists in Aotearoa. Participants experienced conflicts in their identity and standing as hand therapists with a lack of distinguished professional identification. There was also concerns around the healthcare standing, trustworthiness, and progression of HTNZ.

Participants wanted HTNZ to be unified as an independent dual profession in the healthcare sector. This platform was perceived to provide AHTs with confidence in their decision to choose hand therapy practice, stability in hand therapy as a career, and the high reputation of hand therapy in the healthcare community.

> "I am both, I'm a hand therapist and a physiotherapist. But I'm, I'm, um definitely enjoy doing um hand therapy and I'm proud that of what I've achieved. So, I would say I'm a hand therapist too, but I also am a physio." (#11 PT/ Rural)

> "If we are a stronger unit we can, we can build in and, and start to build on that I guess and start to put more strength behind us in a, in a professional aspect. And, and be able to point to ourselves at other professions, such as doctors, um surgeons, you know the higher professions and start to aim higher, um rather than getting stuck down as um a complimentary service I guess." (#8 PT/ DHB)

All four themes recognised the value of individualised support throughout operational and professional levels specific to hand therapy in Aotearoa. The support AHT's require needs to recognise and value the diversity of each therapist and what they bring to the practice of hand therapy. Associate hand therapists require clinically based training in which they are the centre of their learning. An accessible community needs to be fostered to provide the support needed in securing them in their journey. Finally, a solid standing of hand therapy needs to be established to allow AHT's to progress through and feel confident about the organisation and its place in the healthcare world.

Through effective support, as defined by participants, AHTs have the opportunity and encouragement to bring their whole selves into their practice and feel safe and confident in both their practice and their future as a hand therapist.

Questions

What are your first reactions? Gut feelings?

What does/ does not resonate with your own experiences?

Can you see relevance to the field of hand therapy?

Can you see the findings aiding to the development of AHTs in Aotearoa?

Appendix M: Hand Therapy New Zealand exclusion letter

HAND THERAPY NEW ZEALAND
Ringaromi Aotearoa

Friday 10th July 2020

To Whom it may concern,

Josie Timmins is currently the Hand Therapy New Zealand Secretary and sits on the Executive Committee. She has requested to be excluded from discussions regarding membership approval of hand therapists as well as discussions and approval of current and new research scholarships funded by Hand Therapy New Zealand. This exclusion will continue for the duration of her research project.

The Hand Therapy New Zealand Executive Committee have approved this, and it is documented in the Executive Committee July 2020 minutes.

Sincerely,

Davison

Kelly Davison

Hand Therapy New Zealand President
president@nzaht.org.nz

Appendix N: Karakia

Karakia are incantations and prayers that in their true essence are used to gather spiritual guidance and protection within the Māori culture. Karakia are now used in every aspect of life to guarantee a favourable outcome to important events, activities, and responsibilities. Following the introduction of Christianity to A/NZ in the 19th Century new Karakia were introduced to recognise the Christian God and Jesus Christ (University of Otago, n.d.). The Mātauranga Māori Committee (MMC), AUT provided guidance on Māori participation in this research. Following consultation, they suggested Māori participants are offered the option of reciting a Karakia prior to the commencement of a meeting. The MMC further suggested having both faith-based and non-denominational Karakia available for participants should they not know one by memory.

The following Karakia are recommended through the University of Otago, they include faith based (Karakia) and traditional Karakia. Karakia were provided for participants for the opening of the interview, closing of the interview and if needed for when a meal was undertaken (University of Otago, n.d.).

Karakia Timatanga (to open a meeting)

Karakia

He hōnore, he korōria ki te Atua	Honour and glory to God
He maungārongo ki te whenua	Peace on Earth
He whakaaro pai ki ngā tāngata katoa	Goodwill to all people
Hangā e te Atua he ngākau hou	Lord, develop a new heart
Ki roto, ki tēnā, ki tēnā o mātou	Inside all of us
Whakatōngia to wairua tapu	Instil in us your sacred spirit
Hei awhina, hei tohutohu i a mātou	Help us, guide us
Hei ako hoki i ngā mahi mō tēnei rā	In all the things we need to learn today
Amine	Amen

Traditional Karakia

Whakataka te hau ki te uru	Cease the winds from the west
Whakataka te hau ki te tonga	Cease the winds from the south
Kia mākinakina ki uta	Let the breeze blow over the land
Kia mātaratara ki tai	Let the breeze blow over the ocean
E hī ake ana te atakura	Let the red-tipped dawn come with a sharpened air
He tio, he huka, he hau hū	A touch of frost, a promise of a glorious day
Tīhei mauri ora!	

Karakia Whakamutunga (to close a meeting)

Karakia

Kia tau ki a tātou katoa	May the grace of Lord Jesus Christ,
Te atawhai o tō tātou Ariki, a Ihu Karaiti	and the love of God,
Me te aroha o te Atua	and the fellowship of the Holy Spirit be with you all
Me te whiwhingatahitanga	
Ki te wairua tapu	
Ake, ake, ake	Forever and ever
Amine	Amen

Traditional Karakia

Unuhia, unuhia	Draw on, draw on
Unuhia ki te uru tapu nui	Draw on the supreme sacredness
Kia wātea, kia māmā, te ngākau, te tinana, te wairua i te ara takatā	To clear, to free the heart, the body and the spirit of mankind
Koia rā e Rongo, whakairia ake ki runga	Rongo, suspend high above us (i.e. in ‘heaven’)
Kia tina! TINA! Hui e! TĀIKI E!	Draw together! Affirm!

Karakia mō te kai (to bless the food)

Karakia

E te Atua	Lord God
Whakapainga ēnei kai	Bless this food
Hei oranga mō ō mātou tinana	For the goodness of our bodies
Whāngaia hoki ō mātou wairua ki te taro o te ora	Feeding our spiritual needs also with the bread of life
Ko Ihu Karaiti tō mātou Ariki	Jesus Christ, our Lord
Ake, ake, ake	Forever and ever
Amine	Amen

Traditional Karakia

Nau mai e ngā hua	Welcome the gifts of food
o te wao	from the sacred forests
o te ngakina	from the cultivated gardens
o te wai tai	from the sea
o te wai Māori	from the fresh waters
Nā Tane	The food of Tane
Nā Rongo	of Rongo
Nā Tangaroa	of Tangaroa
Nā Maru	of Maru
Ko Ranginui e tū iho nei	I acknowledge Ranginui who is above me,
Ko Papatūānuku e takoto nei	Papatuanuku who lies beneath me
Tuturu whakamaua	Let this be my commitment to all!
Kia tina! TINA! Hui e! TĀIKI E! I	Draw together! Affirm!

Appendix O: Tae Ora Tinana consultation application and feedback forms

Tae Ora Tinana Research Consultation

Title of proposed research	Physiotherapists' experiences and perspectives of professional support in hand therapy training		
Name, Affiliation and contact details principal investigator	Tēnā koutou katoa, Talofa lava. Ko Rangituhi te māunga, Ko Raukawakawa te moana, Ko Ngati Hamoa toku iwi, Ko Falel atai te turangwaewae, Nō Paremata ahau, Ko Ashley rāua, Ko Lorraine Teuila ōku mātua, Ko Josie tōku ingoa. Josie Timmins (Primary Researcher, Masters Student- Auckland University of Technology) Gfk3650@autuni.ac.nz, 021991870		
Names, Affiliations and contact details co-investigators/ supervisors	Professor Nicola Kayes (Supervisor) School of Clinical Sciences, Auckland University of technology nkayes@aut.ac.nz, (09) 9219999 ext 7309 Dr. Daniel O'Brien (Supervisor) School of Clinical Sciences, Auckland University of Technology Daniel.obrien@aut.ac.nz, (09) 9219999 ext 8707		
Checklist for consultation with Māori		Y	N
Iwi/ Hapu covered by research (if known)	Aotearoa physiotherapists/ hand therapists		
Location of research Please specify Geographical area (DHB(s)/PHO(s)	The researcher will be based in Porirua and conducting research on physiotherapist trained hand therapists throughout Aotearoa/ New Zealand. All areas of employment are hoped to be included (DHB's, PHO's, private practice, and self-employment)		
Participants Who are key participants in this research (e.g. age, gender, ethnicity, occupation) What are the recruitment criteria for participation? Are Māori specifically targeted in the participation selection process?	Participants will be recruited from the Hand Therapy New Zealand (HTNZ) membership. These participants will include registered New Zealand physiotherapists who are associated hand therapists (with at least one year of experience) OR registered hand therapists. Registered hand therapists need to have completed their full hand therapy training in New Zealand. These therapists have been deemed appropriate for recruitment as they represent the clinicians who have experienced time as associate members and would have insights into professional support during this time. Demographic and occupational history will be requested alongside the consent with the aim of recruiting a diverse range of physiotherapists. These include age; gender; stage of registration; level of hand therapy experience; geographical area of work; and type of employer. Māori are not specifically targeted in the participant selection process, however, Māori inclusion in the study could help support the Māori workforce in Hand Therapy New Zealand.		

Title of proposed research	Physiotherapists' experiences and perspectives of professional support in hand therapy training
Please provide a short summary on the relevance of the research topic to Māori	Professional support in the training of hand therapists is essential in providing competent and reflective practitioners. Understanding how this support is provided and what works well for associate hand therapists could improve their competency as well as patient outcomes. Māori inclusion in this study could provide us with better understandings on how cultural support is provided and how this could be improved. It could also (as stated above) help support the Māori workforce in HTNZ
Please provide any information on any consultation with Māori that has occurred as part of the development of the research project	At this stage no other direct consultation has occurred with Māori. An application is being submitted on 29/7/2020 to the Auckland University of Technology School of Clinical Sciences Mātauranga Māori Committee for project discussion. Cultural consultation (Pasifika) has occurred with the New Zealand Centre for Educational Research ethics committee Pasifika committee member.
Please give the name of the Ethics committee your proposal will be submitted to	Auckland University of Technology Ethics Committee

Appendix P: Auckland University of Technology Mātauranga Māori Committee consultation application and feedback forms

School of Clinical Sciences
Mātauranga Māori Committee
Project Outline for Discussion

Date of application 29th July 2020
Title of project Hand Therapists' experiences and perspectives of professional support during hand therapy training
Research team members and affiliations Josie Timmins (Primary Researcher/ Masters student) Tēnā koutou katoa, Talofa lava. Ko Rangituhi te māunga, Ko Raukawakawa te moana, Ko Ngati Hamoa toku iwi, Ko Falelatai te turangwaewae, Nō Paremata ahau, Ko Ashley rāua, Ko Lorraine Teuila ōku mātua, Ko Josie tōku ingoa. Nicola Kayes Professor of Rehabilitation and Director, Centre for Person Centred Research, School of Clinical Sciences, Auckland University of Technology (Supervisor) Dr. Daniel O'Brien Senior Lecturer and Clinical Programme Leader- Physiotherapy, Physiotherapy Department, School of Clinical Sciences, Auckland University of Technology (Supervisor)
Research question or hypothesis + benefits/relevance for Māori This study aims to explore the experiences and perspectives about professional support received by New Zealand associate hand therapists as they train to full membership. The research questions what professional supports are being provided and how it is received. It also aims to discover what and how professional supports should be provided to improve the training of associate hand therapists. Although this research does not target only Māori, it is hoped through the purposive sampling that Māori will be involved. The participation of Māori could allow an understanding of how professional support can encompass their worldview and ensure the professional support guidelines encompass cultural safety. Māori participation will also have implications for both the Māori workforce and Māori access to hand therapy.
Research participants Participants will include eight to 12 New Zealand hand therapists who are associated hand therapists (with at least 1 years' experience) OR hand therapists (who completed their full training in New Zealand).
What stage is the research project at? (e.g. proposed or implemented) The research is still in the proposal stage. I am currently completing the ethics component for submission to AUTEC as well as the PGR1.
Consultation with Māori to date Consultation has occurred with Physiotherapy New Zealand Tae Ora Tinana. Guidance was provided on both how to conduct interviews as well as how to form culturally based questions for the interview guide. Further consultation was made with Dale Wilson at the advisement of Emma Webb (Co-Chair Tae Ora Tinana). Dale Wilson provided further guidance in interview questions as well as information on current research she is involved in regarding the AUT physiotherapy undergraduate curriculum and involvement of the Maori worldview/ cultural safety.

Methodology This study will use interpretive descriptive methodology. Interpretive description focuses on capturing subjective perceptions and understandings of a health-related experience and interpreting them to inform clinical understanding. It aligns and gives precedence to disciplinary practice and acknowledges the researchers theoretical and clinical knowledge they bring to a study. Their clinical expertise is considered a platform in which to build the research and generate new knowledge (Thorne et al., 2004). Braun and Clarke's (2006) approach to thematic analysis will be used for the data analysis. This reflexive approach allows engagement of theory relative to the topic into the research as appropriate (Terry et al., 2017).
Recruitment processes An invitation to participate in this study will be sent to Hand Therapy New Zealand to be passed onto their membership. Participants will be recruited through purposive sampling. Therapists who meet inclusion criteria and consent to participate in the study will complete a demographic sheet. Sampling will aim for diversity of key characteristics to capture both breadth and depth of experience (Thorne, 2008). Key characteristics we will seek diversity on include age, gender, ethnicity, undergraduate qualification, stage of registration, level of hand therapy experience, level of qualification, geographical area of work and type of employer to the study. However, these processes will be subject to the available sample of participants.
Data collection Participants will be invited to partake in one online interview (e.g. via zoom or similar platform) or in-person when logistically viable (lasting between 45 to 90 minutes) to discuss their experiences and perspectives surrounding the professional support they received as AHT. Participants will have one month to consider the invitation and discuss any concerns with the researcher. Prior to their interview they will be able to view the interview guide and have time to think about how they might answer the questions. Approximately one week following their interview they will be asked to review a summary of their transcript taking approximately 20 to 30 minutes of their time. This allows the participants to check the accuracy of their main points and allows them to add clarifications or additional statements.
Data analysis Data will be analysed following the thematic analysis methods defined by Braun and Clarke (2006). Data collection and analysis will be carried out concurrently.
Dissemination of results Dissemination of the results will be conducted through several avenues. A submission of the Masters thesis will be made to AUT. A copy of the results will be sent to participants who thorough the consent form indicated that they wished to receive a copy. Participants are also able to discuss any further ways of dissemination they require. Submissions of abstracts will be made to have the research published nationally in the New Zealand Journal of Physiotherapy and internationally in the Journal of Hand Therapy. Abstracts will also be sent to the New Zealand Hand Therapy Conference, New Zealand Physiotherapy Conference, New Zealand Occupational Therapy Conference and Australian Hand Therapy Conference for presentation of the research in each organisation's free papers' categories. Presentations of results via online media will also be offered to New Zealand Hand Therapy SIG's. Requests to present findings of the research with an emphasis on recommendations for practice will be made to the Occupational Therapy Board of New Zealand, Physiotherapy Board of New Zealand, Occupational Therapy New Zealand Whakaora Ngangahau Aotearoa, Physiotherapy New Zealand and Hand Therapy New Zealand Education committees.
Any specific areas for discussion? Māori participant recruitment Overall cultural safety in the study

Would you like your project to remain confidential? No

Do you intend to bring any support people to the meeting? No

Have you read the *Te Ara Tika guidelines for Māori Research Ethics*? Yes

School of Clinical Sciences
Mātauranga Māori Committee

Verification of Māori Consultation

This document provides verification that the research project named below was discussed with the School of Clinical Sciences Mātauranga Māori Committee, Auckland University of Technology. Specific comments and recommendations are indicated following the table.

Title of project: Hand Therapists' experiences and perspectives of professional support during hand therapy training		
Research Team members and affiliations: Josie Timmins, Nicola Kayes, Daniel O'Brien		**Meeting Date:** 02/09/20
Discussion Areas		**Discussed**
Whakapapa: Relationships		
Researcher experience in field		X
Consultation with local stakeholders		X
Consenting process		
Clarity of data usage		X
Dissemination of findings		X
Benefits to participants		X
Protecting the rights & interest of Māori		
Clear purpose of project		X
Relevance to Māori		X
Likely outcome for participants, communities, other stakeholders		X
Participant recruitment methods		X
Māori involvement in project (participants, researchers, etc.)		X
Cultural & Social Responsibility		
Participants' access to appropriate advice		
Participants treated with dignity and respect		X
Privacy and confidentiality		X
Whānau support		
Transparency of research process		X
Mana tangata – Power & Authority		
Reciprocity (acknowledgements, compensation, gifts)		
Risks of participation identified		X
Ownership of outcomes		
Informed consent process		

Comments

1.	To be a hand therapist requires extra formal training as well as on-the-job training. The project will focus on professional support relating to supervision, mentoring, CPD opportunities, funding for conferences, or other support offered at the place of work. Josie is interested in the participants' experiences and perspectives of this process.
2.	There will be 8-12 participants. Josie definitely aims to recruit Māori participants as she is interested in cultural support; however, it is unknown how many registered hand therapists are Māori. The incorporation of Māori perspective may help with future interest and retention of Māori hand therapists.
3.	Josie is based in Wellington and is likely to do mostly online/phone interviews as she would like a geographic spread of her participants.
4.	All participants will be asked cultural questions although they do not have to answer them if they do not want to. She is particularly interested in responses from non-European cultures.
5.	Previous consultation with Physiotherapy NZ Tae Ora Tinana provided feedback in relation to Josie's confidence in pepeha and karakia. Suggestions about how cultural support questions were worded were also made, including asking about the participant's worldview on cultural support and how has this been met during their training.
6.	Josie will be using an interpretive descriptive methodology and thematic analysis.

Recommendations made by Committee

1.	"Professional support" has a diversity of interpretations. It is suggested that Josie build her definition of support into her questions right at the start of the interview, so that her and the participants are using a shared language and have a common understanding from the start of what support and mentoring mean. This will help to ground the interview and ensure that participants aren't making inadvertent assumptions about what Josie is asking about.
2.	Josie might want to have a karakia ready to use if needed. It can be tricky to navigate karakia and introductions but it is good that Josie is at least considering use of karakia. Karakia can be faith-based or non-denominational.
3.	Josie's worldview as someone with Samoan heritage, her understanding of her own culture and how it is incorporated into her life, and her own struggles during training should be used as a strength in her project and be incorporated into her work.
4.	Make sure that the Māori voice is not lost during analysis, particularly if there are small numbers of Māori participants.
5.	Given the likely small number of Māori hand therapists, there is potential that those who participate may be able to be identified and therefore may not be

	willing to share their perspectives. Some consideration of this should be built into the project.
6.	Josie should identify a cultural advisor for the project for her own cultural safety and support. They could help out with preparing a karakia, for example, or with interpretation of Māori words/phrases/perspectives and understanding the context of any comments made. The committee can help with this if needed.
7.	Tammi Wilson-Uluinayau can provide contacts/introduction for two Māori hand therapists (Sandra Kettle, Kelly Davison) who may want to be involved in the project.
8.	The committee wished to congratulate Josie for the incorporation of cultural support into her project - she should get a rich and enlightening perspective.

Please contact the Committee's Administrator Laury Shum at physioadmin@aut.ac.nz if you have any questions about this feedback.

You may be contacted in 12 months' time for feedback about the process and the usefulness of these comments and recommendations to your project.

Signature: Date: 14 September 2020

Grant Mawston
Mātauranga Māori Consultation Committee

Appendix Q: Hand Therapy New Zealand Education Committee consultation research summary and feedback

Research summary for hand therapy consultation

Working Title
Physiotherapists' experiences and perspectives of professional support in hand therapy training

Research Question(s)

- What are the experiences and perceptions of physiotherapists about the professional support received during their hand therapy training?
- What professional support should be provided to improve the development of physiotherapists into hand therapists?

Abstract/Summary:
The aim of this research is to explore the experiences and perspectives of physiotherapists in New Zealand regarding professional support during their hand therapy training. Physiotherapists moving into the field of hand therapy require professional support to meet board requirements in competency and to ensure patient safety. The literature around professional support during this time is scarce. Using the qualitative methodology of interpretive description, eight to 12 participants will be interviewed about their experiences. Thematic analysis will be used for data analysis. It is hoped the outcomes will provide both insight into the process of professional support and how to improve it for future hand therapists.

Background/ Literature/Research Review
Physiotherapists who chose to move into the field of hand therapy can start working as associate hand therapists (AHT) with no previous experience in hand therapy. This can mean them treating conditions of which they may have only limited or no background knowledge. How AHT are orientated, what training they are provided in their first few weeks of work, what patients and conditions are treated and the level of professional support offered are all subjective and clinic/ supervisor dependent, meaning there can be vast disparities in potential competency.

Physiotherapy New Zealand (PNZ) defines professional support as clinical supervision, cultural supervision, mentoring and peer review or support (McDowell & Sole, 2016). The NZPB recognises the importance of professional support for ongoing competency when physiotherapists change their areas of practice and move into other fields including areas of specialisation. Physiotherapists are required to demonstrate at least a minimum level of competence in their changed field. Physiotherapists working below this threshold may pose a risk to their patients (New Zealand Physiotherapy Board, 2018).

The formal requirements for starting clinical work as an AHT include memberships with both the professional body (Physiotherapy board of New Zealand) and parent body (Physiotherapy New Zealand), annual subscription payment, an indication of the formal education pathway they intend to take to gain full registration and a supervisor who is a New Zealand registered hand therapist (RHT) with at least 2 years' experience (HTNZ, n.d.). The formal supervision requirements AHT are set by HTNZ and require a minimum total of 30 hours professional support as well as a recommended monthly communication in their first year of practice (HTNZ Supervision Guidelines, 2011).

Formal education is also required to achieve full hand therapy registration and is completed through the approved AUT programme. AHT are required to complete the hand and upper limb therapy course through the Auckland University of Technology as well as a further post-graduate paper relating to hand therapy or a case study (HTNZ, n.d.). The requirements for the hand and upper limb therapy course highly recommended that you have a sound working knowledge of the anatomy of the upper limb and that you also have a minimum of two years' postgraduate experience in a physical

rehabilitation field of work (Auckland University of Technology, 2020). This leads to AHT often working within hand therapy for at least one year before starting this part of the registration.

Although there is little to no research about the professional supports AHT, require and need the experiences of therapists (physiotherapists and occupational therapists) around times of clinical development are present in the literature. Clinical development, however, has focused mostly on the transition from student to new-graduate physiotherapist rather than any training or development further into their career. The experiences of therapists as they progress from students to independent practitioners showed preparedness for independent work was aided through a solid clinical skills base, participating in extra-curricular based activities, supportive colleagues and mentors with expertise, continuing professional development (CPD) and a supportive work environment valuing learning and the development of staff over profits (Atkinson & McElroy, 2016; Tryssenaar & Perkins, 2001; van Stormbroek & Buchanan, 2017).

Professional support research relating to senior physiotherapists has focused on the development of senior physiotherapists as supervisors rather than support for the senior staff themselves (Davys & Beddoe, 2009; Hall & Cox, 2009; McAllister et al., 2008). A recent New Zealand interpretive description study on professional supervision in private practice which included senior physiotherapists found a low uptake to this area of support (Holder et al., 2020). Professional supervision was not seen as a normal part of the physiotherapy private practice culture and a lack of understanding lead to a limited engagement with it (Holder et al., 2020).

The importance of physiotherapists receiving professional support when transitioning into new fields of practice and specialisation is recognised by PBNZ. There are guidelines around supervision provided by HTNZ but there is a lack of research to inform us of how effective these practices are. The aim of this research is to therefore, address this gap by exploring the experiences and perspectives of physiotherapists professional support in their hand therapy training. Their knowledge could allow us to better understand their professional needs and from this improve what and how professional support is provided and received by physiotherapists.

Design/Plan of the Study:

This study will use the qualitative descriptive methodology of interpretive description. Interpretive description focuses on capturing subjective perceptions and understandings of a health-related experience and interpreting them to inform clinical understanding. It aligns and gives precedence to disciplinary practice and acknowledges the researchers theoretical and clinical knowledge they bring to a study. Their clinical expertise is considered a platform in which to build the research and generate new knowledge (Thorne et al., 2004).

A request will be made to HTNZ to advertise the research and recruit from their membership. Further invitations will be presented in-person or on-line at New Zealand hand therapy special interest group meetings. Therapists who meet inclusion criteria (associate hand therapists (with at least one-year experience) OR fully registered hand therapists who have completed their full hand therapy training in New Zealand) and consent to participate in the study will complete a demographic form. Purposive sampling will be used to gain a diverse range of participants who are willing to take part in the research and because of their experience as hand therapists understand the focus of inquiry (Thorne, 2008). It is hoped the purposive sampling will provide a variation of age, gender, ethnicity, stage of registration, level of hand therapy experience, level of qualification, geographical area of work and type of employer to the study.

Participants will be asked to partake in one online (Zoom) interview (taking between 45 to 90 minutes) to discuss their experiences and perspectives surrounding the professional support they received as associate hand therapists. Before their interview, they will be able to view the interview guide and have time to think about how they might answer the questions. Approximately one week following their interview, they will be asked to review a summary of their transcript made by the researcher (taking approximately 20 to 30 minutes of their time). This will allow the participant an opportunity to add clarifications or information they think might be missing.

Braun and Clarke's (2006) approach to thematic analysis will be used for the data analysis. This reflexive approach allows further theory to be brought into the research as appropriate (Terry et al., 2017).

Finally, a report will be produced and submitted as part of a Masters thesis. All dissemination of results will have any identifiable features removed for the purpose of privacy.

Budget

I am intending to apply to the HTNZ scholarship fund 2020

Timeline

I am planning on submitting my ethic application to Auckland University of Technology Ethics Committee by the end of this month (July 2020) and start the interviews by September/October 2020. I intend to have completed the Masters thesis and submitted by the end of 2021.

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From: Julie Collis <juliecollis@gmail.com>
Sent: Sunday, 19 July 2020 10:09 AM
To: Josie Timmins <gfk3650@autuni.ac.nz>
Cc: miranda_buhler <miranda_buhler@hotmail.com>
Subject: Experiences and perspectives of professional support in hand therapy training

This is to confirm that Josie met with myself and Miranda Buhler, co-chairs of the Hand Therapy New Zealand Education (HTNZ) Committee on the 14th of July 2020.

Josie presented her proposed research project on exploring the experiences and perspectives of physiotherapists in New Zealand regarding professional support during their hand therapy training.

This research is highly relevant to the hand therapy community in NZ. It will provide information aimed at informing the way professional support is provided to associate members. The research has the potential to inform private hand therapy clinic owners, DHB clinic managers and professional supervisors as to how best to provide support. There is the potential for the research to inform development of standardized HTNZ guidelines on professional support for associate members. This could ultimately help ensure appropriate support is provided to all members.

The research method is suitable for the research question. A
reflexive thematic analysis will enable Josie to conduct an in-depth analysis of the data.

We made some suggestions for Josie to consider with respect to the methods: inclusion of occupational therapists in addition to physiotherapists in the sample, limiting the years of experience to less than 1-2 years post gaining full membership and purposively sampling across NZ to ensure representation of large urban and smaller regional centres.

We wish Josie well with her research.

Julie Collis
Miranda Buhler
Co-chairs HTNZ Education Committee

Appendix R: Auckland University of Technology Postgraduate Research Committee practice presentation feedback

From: Nicola Kayes <nicola.kayes@aut.ac.nz>
Sent: Wednesday, 18 August 2021 11:05 AM
To: Josie Timmins <gfk3650@autuni.ac.nz>
Cc: Daniel O'Brien <daniel.obrien@aut.ac.nz>
Subject: Awesomeness

Really excellent stuff today Josie. A really great and powerful presentation.

Here are notes from feedback – all of which are super minor polishing things so well done. Happy to chat through if helpful.

Nic

- Christine – really clear presentation – nicely laid out.
- Julie – clear presentation – great project and worthwhile.
- BJ – nice flow and good speedy; introduce yourself a little more re: your positioning; participant characteristics slide – make clear about how many are in the profession to give a sense of what that might mean; OT foundational knowledge slide – was that the perspective of the participant group or wider than that – just be clear where that comes from; with respect to differing levels of barriers – share a couple of examples that came through so people can see how that is impacting still (which also highlights opportunities for change); photos? Visuals? Engaged the whole time!
- Gareth – really good, not much to add; made me interested in seeing the rest of the themes and material; a good place to focus things; some language things to consider e.g. categorising Asian as Pakeha? (could present total number and then make visible the Māori and Pasifika subgroups); wondered if the 'full comprehensive support' for Māori (background slide) could do with a sub-point; biomedical model of care - didn't given the sense that everyone has to operate in relation to that – could have been clearer?; behaviour, values and culture – should the model be explicitly referred to in that list?
- Nic – the powerful ACC example re: OTs not able to sign off
- Juliet – Really enjoyed listening – very informative; if there was a photo or something visual to add into it to break up the text; in your introduction – agree good to introduce yourself.
- Christine - there will be a bio when you are introduced so that may help with the positioning too – at least to an extent; it may be that when we are online wee need the images and pictures to grab attention, whereas in person may be less necessary?
- Julie – Really cool presentation; quite bold (and brave) statements which really highlights the value of qual in making some visible; in the hand therapy environment it should promote some useful reflection on our profession; Will be presenting on her qual study re: focus on occupation and value of occupation-based interventions and perspectives in hand therapy.

AUT
TE WĀNANGA ARONUI O TĀMAKI MAKAU RAU

Nicola Kayes
Professor of Rehabilitation and Associate Dean Research
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AUT CENTRE FOR PERSON CENTRED RESEARCH
RAINBOW TICK CERTIFIED
THE WORLD UNIVERSITY RANKINGS 2021 TOP 300

Appendix S: Research summary

AUT CENTRE FOR PERSON CENTRED RESEARCH

Summary of Findings

Supporting Associate Hand Therapists

AUT

Hand therapists' experiences and perspectives of support in hand therapy training

Background

Hand therapists learn most of their craft during the first two years of their clinical experience. In Aotearoa, structures around clinical experience are limited and what an AHT experiences is often dependent on their place of employment.

Aims

To explore the experiences and perspectives of hand therapists regarding the support they received as AHTs

- What support is provided?
- How support is experienced?
- How support can be improved?

Participant Characteristics

There was a broad range of characteristics presented with specific significance to the inclusion of Māori and Pasifika hand therapists.

	Overall (n = 12)
Gender n (%)	
Female	9 (75%)
Male	3 (25%)
Age Range (years)	26-56
Ethnicity n (%)	
Pākehā (NZ European, Australian, European, Asian)	8 (66%)
Māori	2 (17%)
Pasifika	2 (17%)
Profession n (%)	
Occupational therapist	4 (33%)
Physiotherapist	8 (67%)
Registration Level n (%)	
Associate Hand Therapist	2 (17%)
Registered Hand Therapist	10 (83%)
Level of Experience (months/ years)	4 months – 30 years
Highest Level of Qualification n (%)	
Bachelor Degree	2 (17%)
Postgraduate Certificate	4 (33%)
Postgraduate Diploma	3 (25%)
Master	3 (25%)
Geographical Location of Employment n (%)	
Urban	9 (75%)
Rural	2 (17%)
Urban and Rural	1 (8%)
Place of Employment n (%)	
Private Practice	11 (92%)
District Health Board	1 (8%)

Method

- Interpretive description methodology
- 12 interviews conducted via Zoom
- Thematic analysis

Team

Josie Timmins - Researcher

Professor Nicola Kayes - Supervisor

Dr Daniel O'Brien - Supervisor

Theme 1: Recognising and valuing the diversity of Aotearoa hand therapy

This theme represents the disciplinary and cultural biases perceived and experienced by participants- especially OTs, Māori, and Pasifika. Participants reported that OT trained AHTs routinely experienced operational and professional barriers which hindered their sense of worth and practice development. The barriers are widespread throughout the profession and ingrained into the culture of the practice. The barriers included a significant PT dominance of workforce numbers and a view of hand therapy as aligning more with the physiotherapy rehabilitation practice.

"I have found it really hard as an OT, ah, to, to get into the hand therapy world because it is very…there is a degree of discrimination within the industry. There totally is, whether they [PTs] mean for it to be that way or not. There just is. And that is the culture I think."

"It isn't a physio biased position [profession]. But I think what it is, is that um ACC has made it as such."

Cultural biases were also reported for Māori and Pasifika participants. Professionally, Māori and Pasifika work within a Western biomedical health model of care which limits their ability to fully engage and bring their whole selves to their practice. Even though, Aotearoa hand therapists reported eagerness to learn and develop themselves culturally this was difficult to obtain.

"I don't know if I'm aware of any cultural hand therapy stuff, to be honest."

"I don't want something that segregates, I want something that shows everybody that a Māori perspective is a great perspective to have in healthcare."

Theme 2: A therapist-centred approach to learning

Varied and generic clinical learning was described and meant uncertainty and insecurity for AHTs in the early stages of their practice. However, participants reported a therapist-centred approach to learning through focusing on the individual helped them to feel secure, capable, and supported in their developing knowledge and skills.

"So, I think you need to then be flexible in the delivery. So even though there are guidelines, you need to evaluate that person. Go, 'where is their need?'"

"Well, it went on for as long as you felt you needed it to go on for and that was another good factor, is if you still didn't feel confident, they continued to provide that support."

Theme 3: An accessible community

Participants reported the difficulties faced by isolated AHTs and the necessity of developing and nurturing close connections as well as those within the wider hand therapy community. Hand therapists reported feeling safe when strong supportive relationships were developed and easily accessible.

"It's really nice to know that you've come through a pathway and for us now, you know, um, you know it's [many] years of turning up and seeing the same therapist at conferences and talking with them and asking them and listening, and you know and, and that's a support network, and I think that's equally as important for learning."

Theme 4: Hand therapy - a united professional body

Participants experienced conflicts in their identity and standing as hand therapists with a lack of distinguished professional identification. There were also concerns around the healthcare standing, trustworthiness, and progression of HTNZ.

Participants saw support as a strong professional platform allowing them confidence in their decision to choose hand therapy practice, stability in hand therapy as a career, and the high reputation of hand therapy in the healthcare community.

"I am both, I'm a hand therapist and a physiotherapist. But I'm, I'm, um definitely enjoy doing um hand therapy and I'm proud that of what I've achieved. So, I would say I'm a hand therapist too, but I also am a physio."

"If we are a stronger unit we can, we can build in and, and start to build on that I guess and start to put more strength behind us in a, in a professional aspect. And, and be able to point to ourselves at other professions, such as doctors, um surgeons, you know the higher professions and start to aim higher, um rather than getting stuck down as um a complimentary service I guess."

Conclusion

Support for Aotearoa AHTs needs to be individualized to the therapist and situated throughout all operational and professional levels

Value and recognition is needed for all Aotearoa hand therapists. Safe environments need to be provided for our OT, Māori and Pasifika therapists to bring their full selves and worldviews to their practice.

An accessible community needs to be fostered to provide AHTs support and a sense of belonging in their journey

A solid standing of hand therapy needs to be established to allow AHT's to progress through and feel confident about the organisation and its place in the healthcare world.

Recommendations for Practice

- Seek specific inclusion of minority groups
- Employment of OT, Māori and Pasifika AHTs to increase demographic and membership
- Education and practice around the integration of occupational-based models of care
- Education and critical reflection opportunities for all hand therapists regarding cultural safety

Presentations

- Hand Therapy New Zealand Conference 2021, Dunedin: Oral Presentation
- New Zealand Rehabilitation Conference 2021, Rotorua: Oral Presentation

Further Information

If you have any comments or questions about these findings please contact the researcher:

Josie Timmins: gfk3650@autuni.ac.nz Phone: 021991870