

# **Videoconferencing Technology for Clinical Purposes: Opinions and Experiences of New Zealand Clinical Psychologists and Neuropsychologists**

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# Abstract

## Objective:

Telehealth is a distanced method for delivery of traditionally in-person clinical psychological and neuropsychological services. Much of the current research has focused on feasibility of the method and there is a lack of data on clinicians' perspectives of telehealth. This research will explore current experiences and opinions of clinical psychologists and neuropsychologists on telehealth practising in Aotearoa, New Zealand.

## Method:

An anonymous sample of registered and practicing neuropsychologists and clinical psychologists were recruited to complete an online survey between August and October 2021. Closed-ended questions were analysed using SPSS and open-ended questions were analysed using a descriptive inductive Thematic Analysis method and Nvivo software. The survey queried non-identifiable demographic and practice details, prior knowledge of telehealth, clinical experience and explored telehealth in the context of three common practise aspects including: history taking interviews, assessments, and therapy/interventions.

## Results:

A total of 88 participants responded to the survey and results showed that 90% had used videoconference for clinical purposes. The mean clinical experience of the sample was 14.5 years, age ranged between 20 and 79 years and 78% were female. Assessments were the least common service used via telehealth ( $n = 19$ ), more so history taking interviews ( $n = 62$ ) and most for therapy and intervention ( $n = 71$ ). Respondents spoke positively of Telehealth for use in specific circumstances. Thematic analysis identified four themes which illustrated professional opinions on the use of telehealth for clinical purposes: Accessibility of clinical services, client and clinician specific considerations, practical considerations, and shifts in the therapeutic relationship.

## Conclusions:

Results of this study generated deeper insight into the current real-world practice of TH in NZ, by exploring the use and acceptability of TH from the perspective of clinically practicing psychologists in the context of rapid uptake during COVID-19. The study reinforced the importance of monitoring relative outcomes and effectiveness of TH for different areas of psychological practise, as requirements differed across different services and treatments.

*Keywords:* telehealth, teleneuropsychology, knowledge, opinions, experiences, videoconferencing, New Zealand

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**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.”

Signature:

A handwritten signature in black ink, appearing to be 'Araf', written over a horizontal line.

Date: 28/01/2022

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## Chapter 1 Introduction

Healthcare professionals have traditionally treated clients face-to-face (F2F), but COVID-19 restrictions have increased the uptake of distanced delivery options. Many psychological services are time-sensitive and/or high-need in nature because they inform rehabilitation and aid recovery for clients. This means that accessibility is important when face to face (F2F) delivery isn't feasible, especially for vulnerable populations or those who are unable to access transport due to financial barriers (Yoshida et al., 2020). This is problematic in NZ because access to psychological services is inequitable and rural populations face greater barriers to services such as physical distance (Pearson, 2020). Creating equal access to psychological services for both urban and remote areas is important (Fearnley, Lawrenson, & Nixon, 2016; Miller & Barr, 2017) because rural areas suffer disproportionately with incidence of traumatic brain injury (TBI) (Feigin et al., 2013) and suicide (Morgaine et al., 2017), with rates within Māori populations disproportionately higher (Ashby, 2020). A potential solution to these inequities is telehealth (TH), which is described as live communication between a client and practitioner using videoconferencing technology. TH in psychology holds both benefits and drawbacks. For example, it assists in maintaining personal contact and relationships with clients when accessibility barriers surmount, however, it poses specific challenges including variation of treatment feasibility, the need to modify standard (F2F) procedures, increased pressure to maintain professional boundaries and communication, and uncertain reliability and validity of standardised tests (Scott Kruse et al., 2018). This research aims to examine the opinions and experiences of NZ psychologists and neuropsychologists regarding TH as a method of service delivery in specific aspects of clinical practice including history taking interviews, assessments, and therapy/intervention.

## Chapter 2 Literature Review

A literature review was undertaken to define core concepts and summarise current literature. First, psychology in context of NZ is outlined, including relevant scopes of practice, why psychological services are important, accessibility barriers and inequality. Next, TH is outlined in the context of psychology including TH in specific areas of practice, TH equity for Māori, and TH in the context of COVID-19. Lastly, justification for this research is presented including how it builds off of prior research.

### 2.1 Psychology in New Zealand

The title ‘Psychologist’ is protected and requires registration with the New Zealand Psychologists Board (NZPB) (Health Practitioners Competence Assurance Act 2003, 2021) [refer section 7(1)]. Psychologists evaluate, diagnose, treat and rehabilitate people across their lifespan with a range of neurological, developmental, psychological, or behavioural impairments that negatively impact day-to-day life. This is limited to the experience and scope of the practitioner.

#### 2.1.1 Clinical Psychology and Neuropsychology Scopes

According to the NZPB, there are currently 4449 registered psychologists in NZ (including clinical, counselling, neuropsychologist, health psychologists, educational psychologists, and general specialisations). This research focuses on psychologists who hold registrations under either neuropsychology or clinical psychology scopes. There are currently only about 160 registered neuropsychologists in clinical practice in NZ and approximately 1,900 clinical psychologists. More specifically, clinical psychologists generally specialise in developmental and psychological variables, treating individuals with developmental disorders such as autism, mental health disorders such as post-traumatic stress disorder, anxiety disorders, and major depressive disorder. In contrast, neuropsychologists focus on brain and cognitive functioning, treating individuals with acquired brain injury, stroke, and neuro-developmental disorders (New Zealand Psychologist Board, 2021). Although there are differences in field of expertise and speciality, the use of history taking interviews, psychometrics, cognitive testing, and therapy/intervention (treatment) are universal components across service delivery under both scopes. Therefore, these aspects of clinical practice are examined in the current research.

#### 2.1.2 Need for Continuity of Clinical Services

The need for services provided across all scopes of psychology has been steadily increasing in NZ (Report of the Government Inquiry into Mental Health and Addiction, 2018; Ministry of Health, 2020). Widespread concern surrounding mental health and accessibility of services prompted a review of current mental health services called Te Ara Oranga: Report of the

Government Inquiry into Mental Health and Addiction (2018). The inquiry found that approximately one in five NZ citizens experience psychological distress or a mental disorder of some kind in their lifetime. This equates to approximately 950,000 individuals (in a population of 5 million), with consequences including loss of lives and over \$12 Billion (5% GDP) annually. The report also noted that the current system is struggling to manage the increasing numbers of people who need help. This has been exacerbated by COVID-19, highlighting the burden of mental health and the need for continuity of services when face-to-face services cannot be carried out. A similar situation occurred for people who required access to neuropsychological services, whereby services ceased to operate during the COVID 19 lockdowns. This had a significant impact on continuity of rehabilitation for thousands of people (Almeda et al., 2021; James et al., 2021; Joyce et al., 2021; A Pedrosa et al., 2020; A. Pedrosa et al., 2020; Phillips et al., 2021).

### **2.1.3 Barriers to Accessibility of Clinical Services**

Despite the need for continuity of clinical services when face-to-face (F2F) services cannot be carried out, there are accessibility barriers in NZ (Report of the Government Inquiry into Mental Health and Addiction, 2018). Specifically, barriers to clinical services include cost, distance, clinician availability, and/or client mobility (Miller & Barr, 2017). Firstly, distance can be an issue when a specialist is required but is located too far away. Secondly, travel time reduces clinician availability for clients not in their immediate area and is a significant cost to funding providers. Thirdly, client mobility can be impacted by lack of finances, vehicles, physical capacity, and/or childcare. Moreover, there are limitations on the availability of specialty psychological or neuropsychological services and waiting lists can be long. This is crucial because delaying consultations can have negative consequences on mental wellbeing, effective rehabilitation, and people's abilities to return to or maintain employment (Brearly et al., 2017). Those who do not receive timely treatment have an increased risk of chronic or acute impairment in their physical health, cognitive capacity, family lives, social and occupational function (Perle, 2021).

### **2.1.4 Inequality for Vulnerable Populations**

Lack of access to psychological services creates substantial health care inequalities for vulnerable populations (Pearson, 2020). One of NZ's vulnerable populations are rural populations, with almost double the incidence of TBI than urban populations (Feigin et al., 2013) and disproportionate mental health disorder rates and severity (Morgaine et al., 2017; Smalley et al., 2010). In addition, Māori populations struggle disproportionately in all regions (Ashby, 2020). Geographical barriers and poor availability of psychological services in NZ compound the relative health burden of people living in regional and remote areas, compared to those living in urban regions (Fearnley et al., 2016). It is crucial to develop modalities of clinical service delivery that are accessible and equitable in all areas of NZ, not just wealthier or larger populations.

Overcoming barriers to services (such as cost and distance of travel) faced by these populations could subsequently increase accessibility, reduce health care inequalities, improve continuity of care, and allow commencement of urgent treatment or diagnosis.

Some recent improvements have been made to combat disparities. For example, the Rural Broadband Initiative began to phase out dial up internet for 90% of rural homes and businesses in 2016, extending access of high-speed broadband. The project is in its second phase and aims for completion in 2022 (Crown Infrastructure Partners, 2020; New Zealand Government, 2019).

## **2.2 Telehealth in Psychology**

TH utilises high-speed internet availability to provide consultations with psychologists long-distance, via live video and sound (Cullum et al., 2014; Gogia, 2019; Miller & Barr, 2017). According to Lustig (2012) this was conceptualised as early as 1925, when the *Science and Invention* magazine featured a doctor diagnosing a patient over radio; the article envisioned a future with the addition of a live video feed. Today, this technology exists and has been utilised in many areas of healthcare as an additional option, when accessibility barriers make in-person consultations difficult or impossible (Gogia, 2019). It is achieved with use of both a device (hardware such as a laptop or smartphone, with access to internet or a mobile data network) and an application capable of transmitting simultaneous video and sound (installed or cloud-based software). The added option for continuation or commencement of treatment long distance when accessibility barriers are insurmountable remains the most commonly cited advantage of TH (Adjorlolo, 2015; Classen et al., 2021; Evans, 2018; Farmer et al., 2020; Gogia, 2019; Madigan et al., 2021; Mahoney et al., 2021; Martyr et al., 2019; Nuttman-Shwartz & Shaul, 2021; Reay et al., 2020; Simpson & Reid, 2014). TH is of particular interest to psychologists, as Perle et al. (2014) found in their study that psychologists displayed higher interest in TH training than other medical professionals. It seems that TH is also of interest to clients, as a systematic review of 44 studies by Kruse et al. (2017) found that client satisfaction was founded on improved outcomes (20%), preference (10%), convenience (9%), affordability (8%), better communication (8%) and less time spent travelling (7%).

### **Telehealth Improving Equity for Māori.**

There has been increasing support for the application of TH to provide increased healthcare options for Māori. Gurney et al. (2021) describes several factors which make TH equity-positive including reducing barriers to care, improving holistic care, reducing contagion, redirection of resources towards the needy. However, an important disadvantage of TH is that it increases disparities if vulnerable populations do not have access to the required technology. The NZ Government has been aware of this for some time and implemented the Marae Digital Connectivity (MDC) to supply rural Marae with all necessary hardware, software, and digital

connectivity required for videoconferencing (Ministry of Māori Development, 2019). The aim was to increase options for accessibility of services for associated whānau, hapū and iwi - including TH. Ashby (2020) studied Māori response to TH in a nursing context and argued that their findings suggested that TH was empowering for Māori, allowing Māori to choose where and when they accessed consultations. Further, they argued that barriers to access were improved for Māori because it removed access difficulties and financial burden for rural and semi-rural Māori. Additionally, Ni Mhurchu et al. (2019) found that outcomes in a large cohort of Māori ( $N = 337$ ) and Pasifika ( $N = 389$ ) enrolled in a TH study utilising a healthy lifestyle intervention were equivalent when using TH compared with F2F interventions. Implications are that the TH approach does not appear to differ significantly in effectiveness when compared to F2F, when the aim is to shift healthy behaviours. However, addition of TH as a supplementary delivery method increases options for access to psychologists and their clinical services. This is needed because Ellison-Loschmann and Pearce (2006) reported in the findings of a survey that 38% of Māori adults disclosed problems in obtaining necessary care in their local area, as compared with 16% of non-Māori. Confirming this, data from the 2018/2019 NZ Health Survey indicated that lack of access to transport was 2-5x more likely to be a barrier for Māori than non-Māori (Ministry of Health, 2019). This finding was also supported by a systematic review by Graham and Masters-Awatere (2020), who found that practical barriers including transport difficulties, distance to medical service, childcare difficulties and cost of transport are a significant barrier to Māori accessing healthcare. Although TH may not be an ideal solution for everyone, the addition of the service as an accessibility option could improve overall healthcare equity by extending availability of psychologists to rural and semi-rural NZ Māori.

### **2.2.1 Telehealth in Specific Aspects of Practice**

When considering TH for psychologist services, different aspects of service have different requirements. This means that some aspects of service are better suited to TH than others. This paper investigates the context of history taking interviews, assessments, and therapy/intervention. The following sections investigate current literature for each aspect of practice.

#### **History Taking Interviews**

History taking is the first type of consultation a client will have with their healthcare professional. It is the cornerstone to care because it informs effective and ongoing treatment and establishes rapport between the client and practitioner (Howard, 2004). Literature on this aspect of practice was scarce, with most studies performed due to the recent COVID-19 pandemic. Pogoda et al. (2021) investigated cases where consultations for TBI were transitioned to distanced service modalities during COVID-19. In the context of history taking, it was found that increased effort was required to build and maintain rapport and client-clinician relationships when compared to the usual standard of a F2F setting. Nilsson et al. (2021) investigated the perspective of primary healthcare patients who had undergone history taking sessions via TH. Patients generally spoke

positively about distanced modalities, appreciating flexibility in times and locations. Patients expressed higher satisfaction when they could interact with a clinician directly (such as TH), rather than automated history taking (such as populating an online form) – despite efficiency of automated options. This illustrated the importance of human interaction. Limitations were that distanced modalities were found to be less appropriate for more complex cases. Overall, participants wished for freedom of choice between distanced options and the study found a need for expansion of distanced modalities. McCord et al. (2020) emphasised the need to maintain professional boundaries when taking on new clients, as an increase in accessibility options comes increased accessibility to sensitive material (such as screen-recording sessions) and alternate means of contact.

### **Assessment**

Assessment is used by psychologists to inform diagnostic questions, gain approval for funding, and inform ongoing treatment. This was the most widely studied aspect of clinical practice regarding TH. Historically, developed countries have utilised computers or other digital mediums for assessment of psychiatric disorders (Iverson et al., 2011), dementia (Cullum et al., 2006; Wouters et al., 2009), sport acquired brain injuries (Cernich et al., 2007; Gualtieri & Johnson, 2008; Peterson et al., 2009), and mild cognitive impairment (Wild et al., 2008). Extension of these kind of services to online delivery (TH) has been investigated in less developed countries. Examples include Ghana (Adjorlolo, 2015), indigenous populations of the Global South (Classen et al., 2021), South Africa (Evans, 2018), and Latino immigrant communities (Martyr et al., 2019). This has been intended to make cognitive and psychological services more accessible for individuals who may be financially, geographically, or otherwise disadvantaged.

Test publishers Pearson (2020) have revolutionised test materials in response to the need for distanced options; examples include publishers' modification of service delivery options, with the addition of an option to email a link to the respondent, which leads to the testing interface, and allowing presentation of stimuli over remote testing platforms (Pearson, 2020). It is unclear how these adaptations and changes affect service delivery, but preliminary evidence supports acceptability of TH from both the client and psychologist's experiences (Chapman et al., 2020) (Chapman, 2020). In the context of care and assessment of cognitive impairment prior to COVID-19, Parikh et al. (2013) found high satisfaction levels among clients of TH based neuropsychological services. Results prior to COVID-19 showed approximately two-thirds of participants had no preference between TH and F2F consultations (TH held an overall satisfaction level of 98%). In comparison, Pulsifer et al. (2021) studied the satisfaction of neuropsychological clients who used TH during COVID-19, finding that once clients could return to F2F, 26% of neuropsychological clients continued to prefer TH modality. This showed TH to be an acceptable and viable additional option for some clients.

Bilder et al. (2020a) created a working group of neuropsychologists to develop guidelines to assist in the delivery of TH. They concluded that TH could facilitate reliable and valid assessments. However, limitations must be accounted for and specific informed consent must be provided. Limitations included age, technical literacy, and linguistic capacity of clients. However, Pulsifer et al. (2021) and Appleman et al. (2021) found in their research that TH could be a valuable option for neuropsychological evaluation of older adults. Pulsifer et al. (2021) analysed results from neuropsychological evaluation prior, during, and after COVID-19 restrictions. They found that 90% of referral questions could be fully addressed via TH. They monitored effectiveness relative to client characteristics and concluded that feasibility of TH is determined by age. The study found higher appropriateness of TH as a delivery method for assessment of older adults with neurodegenerative/memory disorders. Further preliminary evidence in other areas also shows TH holds promise, (Galusha et al., 2014), for feasibility and reliability of tests when compared to F2F (Bilder et al., 2020b; Gnassounou et al., 2021).

### **Therapy and Intervention**

Therapy and intervention are the aspects of psychological practice that treat or manage cognitive and/or psychological challenges which affect an individual's daily life, with the goal of restoring quality of life. Pogoda et al. (2017) investigated distanced treatment of mild TBI. The goal of treatment was to restore clients to pre-injury daily functioning through guided treatment and reintegrate clients into a meaningful life with support of the psychologist. The study found that services based on verbal interaction translated well to the TH medium and could be used as a stand-alone method. Benefits of conducting therapy and intervention via TH included immediacy, flexibility, ability to conference-call with multi-disciplinary teams, as well as ease of communication with client's employers. Limitations included the cost of deploying equipment to clients (when required). Other studies spoke positively about the potential of TH for treatment of mental health disorders. Osenbach et al. (2013) undertook a meta-analysis of 14 studies targeting treatment of depression. The study identified no statistically significant differences between the effectiveness of distanced modalities and F2F delivery methods. Marchand et al. (2011) compared effectiveness of cognitive behavioral therapy (CBT) between TH ( $n = 12$ ) and F2F delivery methods ( $n = 24$ ). This study also showed no statistically significant differences in effectiveness. Gurney et al. (2021) and the NZ Ministry of Māori Development (2019) found that TH presents preliminary evidence towards increasing opportunities for holistic care, by including family and community in the process of therapy and intervention. More specifically, they share how local groups with access to computers and reliable internet were able to assess needs within their communities and facilitate care for those without access to F2F services or reliable technology. Consultations were made available to vulnerable individuals, as they could meet at the location (such as a community centre or Marae) individually or as a group to connect to specialists outside of their local area via videoconferencing.

### **2.3 Context of COVID-19**

The COVID-19 pandemic has placed pressure on health care providers globally to adapt to remote service delivery models such as TH. Doran and Lawson (2021) conducted a study on the impact of the pandemic on providers of mental health care (68% were psychologists), finding that over half were solely using TH to care for clients during the pandemic and that approximately one-third utilised the medium for the first time because of COVID-19 restrictions.

Doran and Lawson (2021) also found that COVID-19 increased positive perceptions on the delivery method from a clinician perspective. When considering client perspective, 42% of their clients only reported positive reviews of the method when compared to 10% who reported only negative. This suggests that opinions on TH may have changed during COVID-19.

### **2.4 Justification for This Study**

This study aims to collect and present NZ psychologists' opinions and experiences of TH. It builds upon a previous study by Chapman et al. (2019). Chapman et al. (2009) examined opinions and experiences of TH in a sample of 90 neuropsychologists' practising in Australia. However, the data was limited as TH had minimal intake at the time the study was conducted (i.e., prior to the COVID 19 pandemic). Results showed that 27.8% of respondents had experience TH. Of those, few had used TH for history taking interviews ( $n = 6$ ) or assessments ( $n = 6$ ). The study found a mixture of positive and negative opinions and experiences regarding TH. Five key themes included: tradition, practical and resource-related considerations, quality of the clinical service, improved service resource use and clinician convenience, and client convenience, comfort and access. A future suggestion for research by the authors was to undertake similar research during COVID-19 to capture the increased uptake of TH due to lockdown restrictions, therefore analysing a larger volume of data (Doran & Lawson, 2021). This research project aims to fill this gap within a NZ context.



## Chapter 3 Methods

### 3.1 Study Aim

The objective of this study was to examine current experiences and opinions of NZ psychologists and neuropsychologists regarding use of TH for provision of clinical services.

### 3.2 Methods

The current study utilised a mixed methods design. Data was obtained via an online anonymous survey distributed nationally via multiple professional psychology groups across NZ. This research was adapted from an Australian study conducted by Chapman and colleagues in 2019 (see Acknowledgements) and modified to ensure relevance to the NZ context. Permission was granted in writing for use and adaptation of the survey within the NZ population. The Australian survey only targeted neuropsychologists, but for the purposes of this study, the questionnaire was extended to include clinical psychologists. This was intended to broaden the scope of the research, as psychologists working in a clinical setting may hold either or both forms of registration. There was also modification in the form of addition of a section intended to gauge each professional's prior knowledge of TH (see Appendix A.).

#### 3.2.1 Procedure

An invitation to take part in the survey using Qualtrics, an online survey software, was distributed to the NZ Psychological Society (NZPS), the NZ College of Clinical Psychologists (NZCCP), and NZ Special Interest Group in Neuropsychology (NZSIGN). Prior permission to advertise through these groups was sought. Sources of distribution included e-newsletters and typical notice procedures. Recruitment was undertaken NZ-wide between late August and early October 2021. Psychologists who held a current practising certificate and working in a clinical setting were included because of the clinical focus of the study. At time of recruitment NZPS comprised of approximately 1,350 members, NZCCP comprised approximately 1,000 members, and NZSIGN comprised of approximately 200 members.

#### 3.2.2 Data Collection

The questionnaire was comprised of multi-choice questions, Likert scales, and open-ended responses were put forward to practising psychologists working in clinical settings to explore experience (knowledge and use) and opinions (satisfaction and recommendations) of NZ psychologists and neuropsychologists on the use of TH. Telehealth was defined as videoconferencing for clinical purposes.

Three aspects of clinical service were explored: (1) history taking interviews (2) psychological/cognitive assessment (3) therapy sessions. The questionnaire encompassed two

main sections (a) demographics and clinical expertise (b) knowledge levels of TH for clinical purposes; and opinions of TH for the three domains of clinical practice. Questions presented were dependent on previous answers. More specifically, the survey asked if the professional had undertaken any aspect of clinical service (history taking interviews, cognitive/psychometric testing, or therapy/intervention sessions). It then asked if they had ever utilised TH for that service. If the answer was yes, further questions were asked (see Appendix B); if the answer was no, skip-logic then minimised participant exertion by asking fewer TH-based questions about that area of practise (see Appendix C.). This logic was repeated for each of the three areas of clinical practice.

### **3.2.3 Ethics**

Approval was acquired via the Auckland University of Technology Ethics Committee (AUTEC) on the 16<sup>th</sup> of August 2021 (Reference number 21/277). No interaction was required with participants, as an online survey format was used, thereby ensuring anonymity of all participants. A participant information sheet was displayed prior to the survey which included informed consent. This outlined the intended use of the information, details of privacy and rights to discontinue at any point during the survey. Consent was obtained by clicking “yes” or “no” prior to commencing the survey. Respondents were only able to progress if “yes” was selected. If “no” was selected, they would be redirected to a page thanking them for their time. Inclusion criteria included a) aged 18-years and older, and; b) hold a current registration as a psychologist, and; c) currently working in a clinical setting. Upon completion of the survey, participants were thanked for contributing their opinions and experience, and were given the opportunity to view the current overall findings of the study.

### **3.2.4 Data Analysis**

Responses to the online questionnaire were recorded via Qualtrics, before being exported into SPSS (for quantitative analysis) and NVivo (for qualitative analysis).

#### **Quantitative Data Analysis**

Profile analyses used descriptive statistics to summarise the demographic, and clinical practise characteristics of the respondents. These were reported as numbers and percentages for categorical variables, means and standard deviations for continuous variables. Confidence and knowledge ratings were scored by either selection of single-choice response between 1 (Not confident at all) and 5 (Completely confident), or a percentage between 1 (Low knowledge) to 100 (High knowledge), with means calculated, with larger scores constituting higher confidence/knowledge. Questions two and three (Appendix B) were considered too prescriptive for in depth qualitative analysis, so were summarised and treated as values.

## **Qualitative Data Analysis**

Open-ended responses were analysed via NVivo software using a descriptive six-stage inductive thematic analytic method (TA) (Braun & Clarke, 2012; Braun et al., 2019). This method can be adapted to any methodology and defines themes as either explicit (semantic) or conceptual (latent). It utilises codes to convey the author's conceptualisation of results and then gathers these codes into larger themes. Results were presented as descriptive and discussed separately in the discussion section, justified by customisation of the TA for the post-positivist methodology of this research. Memos were kept for each stage, so that the analysis was consistent and could be clearly tracked by supervisors. The six stages:

**Stage one** involved thorough data familiarisation and note taking.

**Stage two** was the coding stage. The honours' student created the initial semantic codes that explicitly addressed the research question. All codes were then reviewed and defined collectively by the student and both supervisors (who are both registered clinical psychologists and neuropsychologists).

**Stage three** introduced conceptualisation of themes and sub-themes, by identifying relationships between codes. All attempts were made to be comprehensive and systematic.

**Stage four** included reviewal of themes, by visual comparison with the raw data set and coherency with the research question/s.

**Stage five** was for defining and refining of themes to create a thorough presentation of the data.

**Stage six** was when specific excerpts were selected to accompany defined themes and sub-themes.

## Chapter 4 Results

### 4.1 Participant Characteristics

In total, one hundred psychologists volunteered to complete the survey. From the total, 12 participants were excluded because of either early termination of the survey ( $n = 10$ ), for not currently working in a clinical setting ( $n = 1$ ), or for holding a trainee registration ( $n = 1$ ). In total, 82 gave an answer for all open and closed-ended questions, while five answered at least one section regarding TH. The final sample size was 88. Of these, 91% held NZ clinical psychologist registration, and 33% held NZ neuropsychologist registration; 26% held both registrations. There were two other registration types identified and included in the data: One registered and practising health psychologist and one registered and practising general scope psychologist. Overall, most were female (78%), all age categories were represented (range: 20-29 – 70-79) but most were within the age category of 40 – 49 (32%). All professionals worked either full-time in clinic (67%) or part-time (33%), whereas none worked casual or varied hours. Detailed participant characteristics are presented in Appendix D.

### 4.2 Professional Opinion on Accessibility of Clinical Services

Participants were asked if they believed there are barriers to accessibility, regarding clinical services in NZ (Table 1). Results were heavily weighted towards a high number of barriers and low accessibility.

**Table 1.**

*Opinions on accessibility Barriers to Clinical Services in NZ*

Barriers in NZ	<i>n</i>	%
Very few or no barriers / good accessibility	1	1.1%
Some barriers / okay accessibility	14	15.9%
Undecided / need more data	4	4.5%
Many barriers / below ideal accessibility	42	47.7%
Accessibility crisis	27	30.7%

### 4.3 Current Knowledge, Experience, and Confidence Levels Using Videoconference in a Clinical Setting

#### 4.3.1 Knowledge Levels

Table 2 displays the respondents' level of knowledge of TH. Respondents rated knowledge of published literature and psychometrics for remote administration lower than their knowledge of TH platforms and software.

**Table 2.***Knowledge Levels of Telehealth*

Knowledge area	<i>M</i>	<i>SD</i>
Dimensions of telehealth platforms/software	68.1	20.5
Telehealth practice by psychologists outside of NZ	42.3	28.5
Scientific literature on the reliability of distanced psychometrics	40.1	30.1
Published psychometrics for remote administration	33.1	28.6

*Note:* Ratings were self-disclosed from 1 to 100 with higher ratings equating to higher knowledge levels.

**4.3.2 Experience Levels**

The mean time respondents had spent in a clinical role was 14.5 years ( $SD = 9.14$ ), with a range of 1 to 44 years. All except one psychologist practised history taking interviews as a part of their role ( $n = 87$ ; 98.9%), most practiced therapy or intervention sessions ( $n = 82$ ; 93.2%), and most administered assessments of some form as part of their role ( $n = 76$ ; 86.4%).

Overall, 79 (89.8%) of the respondents had used TH to deliver a clinical service. The aspect conducted the least via TH was assessments, practiced by only 19 participants (22.4%).

**4.3.3 Confidence Levels**

Confidence levels for participants with and without TH experience are displayed in Table 3 and Table 4, by aspect of clinical service. The highest overall confidence in using TH was shown in delivery of therapy/intervention. This was reported both by those with and without TH experience.

**Table 3.***Confidence of Participants with Prior Telehealth Experience*

Area of clinical practice	participants	percentage	confidence
	<i>n</i>	%	<i>M (SD)</i>
History taking interviews	62	71.3	3.94 (0.9)
Cognitive assessments or psychometrics	19	22.4	3.53 (1.3)
Therapy session/interventions	71	85.5	4.08 (0.9)

*Note:* Participants may have experience in multiple areas. Confidence was self-disclosed via a Likert scale between 1 (Not confident at all) and 5 (Completely confident).

**Table 4.***Confidence of Participants without Telehealth Experience*

Area of clinical practice	participants <i>n</i>	percentage %	confidence <i>M (SD)</i>
History taking interviews	25	28.7	3.36 (1.2)
Cognitive assessment or psychometrics	66	77.6	2.00 (0.9)
Therapy session/intervention	12	14.5	3.42 (1.1)

*Note:* Participants may lack experience in multiple areas. Confidence was self-disclosed via a Likert scale between 1 (Not confident at all) and 5 (Completely confident).

#### 4.4 Frequency and Percentage of Telehealth Use

Respondents who utilised TH were asked how often in the last year (mid-2020 to mid - 2021) that they had utilised TH for applicable practise areas (Table 5). They were then asked via open-ended questions how their use equated to the overall percentage of consultations in each relevant area. Frequency of use is illustrated in Table 5 and how this equates to their overall use is described below.

**Table 5.***How Often Participants Conducted Consultations via Telehealth in the Last Year*

Frequency of telehealth use	history taking interviews	cognitive or psychometric assessments	therapy or intervention session
	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>
I have only completed one history taking interview via videoconference	9 (10.2%)	3 (3.4%)	1 (1.1%)
More than once a year but less than once a month	37 (42.0%)	11 (12.5%)	14 (15.9%)
Once a month	3 (3.4%)	-	7 (8%)
More than once a month but less than once a week	5 (5.7%)	1 (1.1%)	22 (25%)
Once a week	4 (4.5%)	4 (4.5%)	6 (6.8%)
More than once a week	4 (4.5%)	-	20 (22.7%)

Of those who conducted history taking interviews via videoconference, 45 (72.6%) associated usage to 10% or less of their overall history taking in the last year, 13 (21%) associated usage to over 15% (two of these were > 75%), and 4 (6.5%) specifically stated that it is was too hard to calculate because of changes in typical practise caused by COVID-19lockdown restrictions.

Of those who had conducted an assessment via videoconference, 14 (73.7%) associated this to 5% or less of their total assessments in the last year, 2 (10.5%) associated this to between 10% and 15%, 2 (10.5%) associated it to between 30% and 40%, and 1 (5.3%) associated it to 75%.

Out of those that performed therapy/interventions via TH 33 (46.5%) associated TH to 10% or less of their total for the year, 18 (25.4%) associated it as between 10% and 20%, 7 (9.9%) associated it as somewhere between 25% and 40% of therapy/interventions, 5 (7%) associated it between 50% and 75%, and 1 (1.4%) only conducted therapy sessions via videoconference.

Overall, 4 (5.6%) stated that 100% of therapy/interventions were conducted via TH during lockdowns but that very few were conducted otherwise. Only 3 (4.2%) gave no quantifiable response.

#### **4.5 Software and Hardware Used to Deliver Consultations via Telehealth**

Participants were asked about their hardware and software use by area of practice, to give further insight into their experience of TH. A full table is available in Appendix F.

Most participants were able to describe specific software or hardware use for each area of practice ( $N = 75$ , 97.4%). Many ( $n = 61$ , 80.3%) were able to identify both hardware and software, some ( $n = 13$ , 17.1%) could only identify their software use, and a few ( $n = 3$ , 3.9%) could only identify their hardware.

Zoom was the most utilised software in all areas of practice. It was used by 77.4% of participants for history taking, 63.2% for assessments, and 72.9% for therapy/intervention. The second most common was software was Doxy.me. It was used by 25.8% for history taking, 10.5% for assessments, and 22.9% for therapy/intervention. Participants elaborated that Zoom was most popular in their private practice because clients often had prior experience with Zoom. Doxy.me was often supplied by their employer organisations. Participants did not express any variation in security concerns between these software. Eighteen other software programs were identified, but none were used by more than 6.5% of participants.

Laptops were the most popular hardware, used by 59.7% for history taking, 52.6% for assessment, and 45.7% for therapy/intervention. Responses explained that laptops were favoured due to flexibility in work location. Desktop computers were the second most popular hardware and explained to be more difficult to relocate. They were used by 19.4% of participants for history taking, 15.8% for assessments, and 18.6% for therapy/intervention. Cutting edge technologies such as Remarkable Tablets (which mimic traditional pen and paper) were utilised by only two psychologists. They used them for history taking and therapy but not for assessments.

## 4.6 Willingness to Use Telehealth in Future

All respondents were asked if they would use videoconferencing as a delivery method in future, for each area of clinical practice (Table 6).

**Table 6.**

*Willingness to Use Telehealth in Future*

	History taking <i>n</i> (%)	Assessment <i>n</i> (%)	Therapy/intervention <i>n</i> (%)
Yes	54 (61.4%)	16 (18.2%)	62 (70.5%)
Maybe	28 (31.8%)	41 (46.6%)	17 (19.3%)
No	5 (5.7%)	28 (31.8%)	4 (4.5%)
Missing	1 (1.1%)	3 (3.4%)	5 (5.7%)

*Note:* Some missing values are present, due to early terminations of the survey.

## 4.7 Appropriateness of Telehealth

Participants were asked for their opinion regarding appropriateness of TH in each area of clinical practice (Table 7). Telehealth was not considered appropriate in all circumstances, for any area of practice. The only area of clinical practice that any participants believed TH was never an appropriate method of delivery was assessment ( $n = 11$ , 12.5%).

**Table 7.**

*Appropriateness of Telehealth, by Aspect of Practice*

When Telehealth is deemed appropriate	History taking <i>n</i> (%)	Assessment <i>n</i> (%)	Therapy/intervention <i>n</i> (%)
In all circumstances	-	-	-
In most circumstances	39 (44.3%)	14 (15.9%)	41 (46.6%)
In specific circumstances	42 (47.7%)	56 (63.6%)	40 (45.5%)
Never	-	11 (12.5%)	-
Missing	7 (8.0%)	7 (8.0%)	7 (8.0%)

*Note:* Some missing values are present, due to early terminations of the survey.

## 4.8 Psychologists' Opinions on Telehealth for Clinical Purposes

Open-ended responses were analysed via NVivo software using a descriptive six-stage inductive thematic analytic method (TA) (Braun & Clarke, 2012; Braun et al., 2019) and memos were kept



for each stage. In total, between 8-16 open-ended questions were answered per participant ( $N = 88$ ) and the quality was good, with 93% answering all questions presented to them. Themes and codes reached the point of exhaustion, defined as the point where no new concepts appear.

Four key themes were identified: 1. Accessibility of Clinical Services 2. Client and Clinician Specific Considerations 3. Resourcing and Practicalities 4. The Therapeutic relationship. Theme 2 (client and Clinician Considerations) was divided into two sub-themes: a) Client Specific Considerations, and b) Clinician Specific Considerations. These themes are presented below, and a detailed codebook is available in Appendix G.

## 4.9 Opinions on Access to Clinical Services

This was the most common theme, raised by 93.4% of participants. Both COVID-19 continuity and non-COVID-19 related accessibility were mentioned by an equal number of participants ( $n = 70$ ; 79.5%). Non-COVID-19 accessibility reasoning fell into two distinct streams – convenience ( $n = 45$ ; 51%) or necessity ( $n = 47$ ; 53.4%). These are detailed below alongside freedom of choice, which was also commonly raised in the context of using TH for accessibility purposes ( $n = 35$ ; 39.8%).

**Convenience:** Participants believed convenience was a benefit for both clients and clinicians, with participants sharing how *'convenience for parents due to lack of travel is huge'* (R48) and how TH allows *'more flexibility with times for appointments'* (R56). Respondents wrote positively about the flexibility of TH, particularly practice location and scheduling of consultations. Respondents appreciated reduced business overheads and expressed the opinion that their clients gain from increased comfort and convenience of being located at home, reduced cost of travel, and added capacity for collateral informants to attend sessions remotely. A few participants cautioned with statements such as: *'we need to ensure that Tele-health does not become the method of convenience and ensure ongoing person-centred assessment and intervention'* (R25).

**Necessity:** This was raised by over half of the participants ( $n = 47$ ; 53.4%), with many expressing the opinion that *'it is critical to be able to provide service, if the alternative means no service at all'* (R76). A general desire to provide prompt delivery of services to vulnerable individuals was apparent. There was an urgent undertone to opinions, with participants sharing real life experiences such as when *'clients [are] in acute stage of recovery from concussion and teams requiring specialist guidance can't always wait'* (R85). Participants explained that TH allowed their clients to undergo testing via TH that they perceived as quite important and/or reassuring, when *'client or [clinician] cannot travel'* (R65)

**Freedom of choice:** This was emphasised as important. Specifically, participants expressed that they *'don't want to feel forced to offer therapies that [they] don't want to offer'* (R17), wishing not to feel cornered into TH by peers, employers, or referrers.

## 4.10 Opinions on Clinician-Specific and Client-Specific Considerations

Participants recommended weighing both client-specific and clinician-specific variables when considering use of TH. A total of 80 participants (91.1%) raised client and/or clinician specific considerations in their open-ended responses. A detailed summary and description of the key findings are presented below.

### 4.10.1 Clinician-Specific Considerations

The importance of considering clinician-specific variables was highlighted by 73 (83%) of participants (Table 8). Participants shared professional variables which affected their confidence in providing effective clinical consultations via TH. These are summarised below.

**Table 8.**

*Clinician specific variables raised, by Number of Participants (n = 73; 83%)*

Clinician specific variables	Participants <i>n</i> (%)
Resourcing (training, equipment, practice space)	66 (75.0%)
Knowledge and experience	35 (39.8%)
Quality of service	33 (37.5%)
Clinician preference	26 (29.5%)
Organisational support	22 (25.0%)
Generalised scepticism	16 (18.2%)
Assessment scepticism	12 (13.6%)
Peer acceptance	12 (13.6%)

*Note:* All percentages are based on the total number of participants ( $N = 88$ ), because all participants had the opportunity for open-ended responses for each section.

**Resourcing:** Of the 66 who commented, seven (9.6%) felt adequately equipped to undertake TH while 59 (80.8%) requested further supplies. Of those in lack, specifics included hardware, software, practice space, training, and appropriately normed tests. Several participants reported poor quality webcams, microphones and/or speakers, which meant ‘*occasionally having to ask [clients] to repeat*’ (R18). Security of software was a common concern. Some participants appreciated the benefit of not having to book a practice space and some commented that their space at home is not suitable. Specific issues were raised around privacy, sound-proofing, and

lack of an appropriate physical setting (i.e., background). Some participants who had an appropriate space expressed discomfort, specifically that it could be hard to transition between their workspace and home mindset when working from home. Thirty participants requested TH specific training and guidelines, stating unfamiliarity with suitable platforms, data storage, confidentiality, and remote test administration. Importantly, 34.1% believed themselves under-trained regarding TH modalities, sharing a *'need to upskill further'* (R26). Also, supervision opportunities and clear and coherent advice from the NZPB (and the American Psychological Association for international TH users) were requested resources. Some participants did not have access to what they believed to be adequate material to conduct a remote assessment. Others stated there was a lack of properly normed tests for remote administration, effecting validity and acceptance in Court.

**Knowledge and experience:** In total, 39.8% participants expressed a lack of confidence in their knowledge and experience using TH.

**Quality of Service:** Most who commented on quality of service believed that TH was a *'lesser quality option'* (R8) for clinical service delivery. A few reported an increase in client satisfaction, and some found it well-suited to specific services such as CBT, Eye Movement Desensitization and Reprocessing (EMDR) and feedback sessions.

**Personal preference:** Several participants justified viewpoints with personal preference. Most preferred F2F but multiple acknowledged that their preference may not be the same as others. For example, one participant stated that TH is *'not a good match for me, but the research shows telehealth is effective for short term CBT type work'* (R34).

**Scepticism:** Some participants responded with strong scepticism towards TH (18.2%) or conducting distanced assessments (13.6%), preferring only to utilise it as a last resort or pause consultations when F2F is impossible. A participant shared their preference to *'postpone until after lockdown as feel it is best practice to do in person'* (R7).

**Organisational support:** Support and guidelines from organisations such as district health boards, referrers, and the NZPB was considered an important factor for many clinicians.

#### 4.10.2 Client-Specific Considerations

Participants highlighted the importance of *client-specific considerations*. Variables mentioned included client home environment, capacity, perspective, preference, consent, and technological literacy (Table 9). These are detailed below.

**Table 9.**

*Client-specific variables Raised, by Number of Participants (n = 69, 78.4%)*

Client-specific variables	Participants <i>n</i> (%)
Client environment	40 (45.6%)
Client capacity	30 (34.1%)
Client perspective	22 (25.0%)
Client preference and consent	20 (22.7%)
Client resources	20 (22.7%)
Client tech literacy	11 (12.5%)

*Note:* For full code descriptions please see the code book located in the Appendix. All percentages are weighed against the total of 88 participants, some of which terminated the survey early.

**Client environment:** This was raised as an important consideration by most participants. Concerns centred around lack of control regarding privacy, interruptions, integrity of testing, and clients hiding observers behind the camera. These concerns were not unfounded, with participants sharing a few anecdotes such as ‘*clients hiding family members in the room out of sight to 'check me out' without consent*’ (R54). Some participants shared the strategy of having a customised informed consent form signed prior to TH.

**Client capacity:** This was the second most mentioned client factor. This excluded client resources and technological literacy, which have standalone sections. The general advice from participants was to screen clients for appropriateness of TH regarding risk, presentation, language barriers, age, intellectual functioning, and motivation levels. For example, ‘*not clients with severe psychopathology or risk issues*’ (R26) but self-motivated clients were favoured when screening for appropriateness of TH (R35). Some symptoms were aggravated by screen time (R39), while other clients required gradual exposure in some form (R40).

**Client perspective:** This was an important factor for participants and focused on how the clients ‘experienced’ the consultations. Most comments were positive and included continuity of sessions, comfort, convenience, and reduction of shame. Participants spoke negatively about the physical distance from their clients, increased interruptions, and lack of transition away from the therapy room post-session. Multiple participants shared a wish for further ‘*research into client 'experience' of videoconferencing*’ (R28).

**Client preference and consent:** These were shown to be variables when deciding appropriateness of TH. Opinions were divided between participants who believed their clients prefer F2F and those who state their clients request TH. One participant cautioned that ‘client acceptability of telehealth is not the same as effectiveness’ (20).

**Client resourcing:** This was a factor because *‘we need to be careful that we don't assume everyone has digital resources’* (R15). The most common issue raised in respect of client resource availability was poor or no internet connection; this was usually connected to clients living rurally. Poor internet connections disrupted sessions with low audio quality and glitching video feed. Some clients had no access to WiFi at home, having to rely on limited mobile data packages (hot spotting); some had no internet at all. A few clients lacked appropriate technology e.g., no phone, computer, or printer; some lacked specific technology for their condition, such as an appropriate hearing aids for TH. This meant that clients may require additional resources to participate optimally in TH consultations.

**Technical literacy of clients:** This was shown to be a significant but remediable factor. The main barrier seemed to be navigating devices and TH software. Technically literate clients were favoured when screening for acceptability but *‘most clients have adjusted very well’* (R3).

#### 4.11 Practical Considerations

In total, 84% of participants raised practical considerations as important variables. Specifics are detailed below.

**Table 10.**

*Coding Frequency, by number of participants (n = 74, 84.1%)*

Practical considerations	Participants <i>n</i> (%)
Evidence	41 (46.6%)
Validity of Test Administration	34 (38.6%)
Test Administration Practicalities	30 (34.1%)
No Need	24 (27.3%)
Fatigue	20 (22.7%)
Efficiency	18 (20.5%)
Tech Issues	17 (19.3%)

*Note:* all percentages are based on the total number of participants ( $N = 88$ ), because all participants had the opportunity for open ended responses for each section.

**Evidence:** Participants highly valued evidence-based practises. Overall, they expressed a wish for further evidence surrounding TH for clinical purposes. Participants were specifically interested in '*evidence of effectiveness*' (R35), particularly regarding each of their own modalities.

**Validity of test administration:** Participants were divided about the validity of test administration via TH. This was partly due to the wide variety of tests available and their differing requirements. Concerns were either due to a lack of evidence or were practical or political in nature. Specifically, many participants wished for '*tests with evidence of equivalency with traditional methods*' (R37). The most common practical concern was that the clinician could not control the client's environment, so '*can't be sure there are no other people present - which does impact on test scores*' (R32). A small minority held suspicions about justification of remote assessment, worried that some clinicians were pushing for approval '*in order to facilitate them having an income stream [during lockdowns]*' (R8).

**Test Administration Practicalities:** Specific test administration practicalities were a common factor when deciding appropriateness of TH. Because of this, '*straightforward testing*' (R4) was deemed appropriate via TH by several. Examples provided included questionnaires and screening tests. This was justified by prioritising prompt delivery - allowing progression of important treatment and having a re-assuring effect on clients. Participants spoke negatively about several barriers to successful remote testing, including: unforeseen confounding variables, time keeping complications, lack of norms and lack of telehealth-specific guidelines for specific tests.

**Fatigue:** Many participants considered TH-specific fatigue to be a challenge for clinicians. This was expressed: '*what can already be a demanding session becomes even more so with added cognitive and technical load*' (R8). Reasoning was often due to variables such as placement of webcams. Specifically, multiple participants explained that they were trained '*not to look at the screen [but] to look directly into the camera*' (R22). Participants found this to be exhausting, to diminish their feelings of connection with clients, and caused loss of important non-verbal cues. A few clinicians expressed that fatigue is the reason they will not offer TH services, and a few expressed a wish for wider recognition of this factor.

**Tech Issues:** Troubleshooting minor technical issues during consultations felt straightforward for some participants and others found it frustrating. Participants found it particularly troublesome during assessments, raising concerns about the validity of tests when encountering video freezing issues.

## 4.12 Shifts in Therapeutic Relationship

This theme illustrates how participants felt the therapeutic relationship is different via TH.

**Table 11.**

*Shifts in Therapeutic Relationship Raised, by Number of Participants (n = 68, 77.3%)*

Aspect of therapeutic relationship	Participants <i>n</i> (%)
Rapport	35 (39.8%)
Non-verbal cues	33 (37.5%)
Risk	29 (33.0%)
Engagement	22 (25.0%)
Power dynamics	15 (17.0%)
Insight	13 (14.8%)

*Note:* all percentages are based on the total number of participants ( $N = 88$ ), because all participants had the opportunity for open ended responses for each section.

**Rapport:** Opinions were mixed regarding rapport. Many participants spoke negatively about rapport via videoconferencing, but others did not find it difficult to connect emotionally with clients. Several shared concerns regarding creation of rapport with new clients over TH. One stated ‘*it’s harder to get such a firm rapport with the client*’ (R34). Participants listed challenges including interactions feeling clunky, less natural, and sometimes impersonal. This hindered establishment of rapport and made it difficult to gauge due to diminished subtleties of interpersonal interaction such as lack of non-verbal cues. Other hinderances included talking over each other and difficulty getting the tone of events right. Participants who relied heavily on therapeutic relationship or flow found this particularly challenging. Some felt they lost potency to important aspects of their practice such as ‘*the therapist gaze, the activation of the attachment system, [and] transference and countertransference*’ (R36). However, participants noted that TH was more effective if rapport was already established.

**Non-verbal Cues and Risk:** These two variables had a strong relationship throughout the data. Difficulty picking up non-verbal cues (facial and body) was stated as important for a few reasons. Most noted was that psychologists felt limited in their capacity to monitor and regulate client distress or notice possible neurological symptoms. This was not only important for informing accurate diagnostic questions but also created a sense of unease within clinicians regarding their ability to manage risk from a distance. For example, ‘*[clients] might be distressed and unable to*

*manage that distress in the moment, engendering a potential risk to themselves'* (R3). One psychologist shared about *'client's dissociation and not being there physically to intervene'* (R12). Participants shared that they responded by taking on minimal risk and low-complexity clients over TH, or by being more supportive in their conversations (R1). However, some clinicians expressed the benefit of an increased sense of *'personal safety'* (R44) from contagion, violence, attack, and/or abuse from clients when consulting via TH.

**Engagement:** Engagement variables were a common hinderance with both clients and clinicians experiencing increased distractibility. This distractibility makes the *'therapeutic frame is more fragile'* (R10) because it *'takes more effort to be fully present and observing boundaries'* (R10). Clinician-related distractibility surrounded technology issues, such as positioning of webcams, intermittent connectivity, or notifications appearing on the screen. Client-related distractibility mostly revolved around being in their home environment, such as family member interruptions. Clients also sometimes took advantage of the distance, as *'it can serve as a form of avoidance of addressing issues for clients'* (R17). Engagement variables were commonly age related in nature, with *'difficulties gaining rapport with teenagers'* (R3) and lack of usual ability to conduct play therapy with children. However, TH also had some benefits regarding engagement. For example, *'many clients seemed more relaxed and open'* (R20) when in their home environment, which made them more willing to engage than during F2F consultations.

**Power Dynamics:** Several clinicians noted *'less power dynamics, as clients choose their own space'* (R8), so clients often felt comfortable and less defensive. This manifested in the form of client's treating the sessions as less formal. Participants shared that TH *'seems to remove some of the professional element for some clients'* (R15) and conversations sometimes being more supportive and less challenging. Group and couple consultations were particularly affected by the loss of power dynamics, especially when there were heated people in the same space while the therapist is in a distant position. Participants shared stories such as how it *'is really hard to control [multiple] people on the other side of the camera, rather than all of us being in one space. I am unable to sit between them'* (R5).

**Insight:** Many psychologists found the shift in dynamics insightful and took advantage of the change, as being privy to home-life allowed deeper *'insight into [client's] lives.'* (R2). It was particularly useful for psychologists to see *'children and parents interacting in their home environment, [observing] real life struggles.'* (R12). Further, clients were found to be more relaxed and open about sensitive topics, displaying reductions in shame.



## Chapter 5 Discussion

The aim of the present study was to examine the current opinions and experiences of NZ psychologists regarding TH as a means of delivering clinical services. The current study expanded upon the work of Chapman et al. (2020) who investigated the opinions and experience of TH by Australian psychologists prior to COVID-19. Areas examined in this study were prior knowledge levels of TH, confidence levels, and experience levels. TH was also examined in the context of three common areas of clinical practice including history taking, assessments, and therapy/intervention.

Seven key findings included 1) insight into psychologists' current experience, knowledge, and confidence using TH 2) a high willingness of psychologists to use TH in future 3) opportunities and challenges facing appropriateness of TH for each area of clinical practice 4) the high value of accessibility to clinical services 5) the importance of TH-appropriate resourcing for clinicians 6) privacy concerns around client-home-environment 7) fatigue due to loss of feelings of connection.

### 5.1 Psychologists' Current Experience, knowledge, and Confidence with Telehealth

Chapman et al. (2020) investigated TH prior to COVID-19 and expected the overall percentage of psychologists with TH experience to increase post-study. The results of this current study were consistent with this hypothesis, with a significantly higher number of psychologists' utilising the TH modality. Although experience was high, in contrast to this participants' knowledge of TH showed wide variability. In general, familiarity with TH hardware and software was rated higher than knowledge of international TH use, scientific literature on the reliability of distanced psychometrics, or psychometrics for distanced administration. This highlights that although a large percentage were utilising TH and familiar with the equipment, a large number of psychologists were unaware of international practises, evidence, and material available for TH modalities. This may be due to the fact that prior to the pandemic, less than 1% of mental health consultations were provided via TH (Huskamp et al., 2018; Patel et al., 2020). According to Doran and Lawson (2021), the pandemic caused a rapid increase in uptake of TH. This is contextually important to the results because it means that many participants were likely in the process of urgently expanding their repertoire to include TH when this research was undertaken. This suggests many clinicians may not having had time to expand their research expertise to include TH. O'Rourke et al. (2021) explains that professionals were caught off guard because the rate of uptake was much higher than expected in the healthcare industry, with an original prediction prior to COVID-19 of 17% uptake annually, however estimates since 2020 are anticipated to reach 80%. To determine what this sudden uptake is like, Iskander et al. (2021) investigated the experience of psychology interns in training during the height of the pandemic. The study found

that although TH resources existed prior to the pandemic, much was created because of the need arising from lockdowns. They also noted that TH training was not a traditional part of psychology practise. This sudden need to add a new modality that was not previously required may be in part a reason for inconsistent knowledge between participants. However, these challenges were also met with opportunities including acquisition of skills such as innovation (flexibility and creativity with delivery methods) and expansion of modality repertoire with the addition of TH (Iskander et al., 2021). In alignment with the variation in knowledge levels, participants expressed a lack of confidence in their TH knowledge and experience. Similarly, a third expressed a need for further specialised TH training and supervision opportunities. This shows a need for further training incentives. Evidence towards the importance of this is outlined by Jarvis-Selinger et al. (2008) who suggest that to achieve effective TH uptake, it is key to foster clinician confidence through provision of professional development opportunities.

## **5.2 Willingness to Use Telehealth in Future**

A high interest in willingness to use TH in future for history taking and therapy/intervention was found in the current study. Considering that less than 1% of consultations were held via TH prior to COVID-19 (Huskamp et al., 2018; Patel et al., 2020), the high uptake of TH and subsequent interest in continued use builds upon the results found by Doran and Lawson (2021) that suggest the COVID-19 pandemic increased positive perceptions on TH from a clinician perspective. This may suggest that TH uptake has increased awareness of broader applicability. Further evidence in support of this was found by Connolly et al. (2021) who examined multidisciplinary health care provider perceptions of TH. Mental health providers rated TH higher than all other healthcare professionals, rating TH as equal or better regarding efficiency and quality.

## **5.3 Telehealth Use in the Three Aspects of Practice**

The next three sections examine the key finding for each aspect of practice investigated in the context of TH. These included history taking interviews, assessment, and therapy/intervention.

### **5.3.1 Changes in Rapport**

The first key finding presented here was in the context of history taking interviews. Three quarters of participants noted changes in therapeutic relationship and shifts in rapport dynamics was the topic raised by the most participants. Of particular concern was the increased challenge of building rapport in the context of history taking interviews. This is a key finding, as not much research has been done on the specific challenges of history taking interviews in the context of TH in psychology. Results of this study found specific challenges during establishment of rapport including diminished subtleties of interpersonal interactions such as difficulty observing non-verbal cues, unintentionally talking over each other and difficulty deciphering the emotions behind events shared by clients. Reese et al. (2016) expands on this with early research into TH

that suggests empathic processes are salient, so TH cannot typically foster outcomes such as stronger empathic accuracy. Participants of the current study expressed specific challenges which hindered building rapport with new clients. They stated that interactions felt clunky, less natural, and sometimes impersonal. Similarly, Pogoda et al. (2021) suggests history taking interviews require increased efforts for establishment of rapport. This is particularly challenging for individuals who relied heavily on therapeutic relationship skills such as ‘therapists gaze’ or flow. A true therapists’ gaze was likely impossible without specialised equipment, as individuals would have had to stare into the camera without looking at their clients to generate this experience. A study by Wohltjen and Wheatley (2021) investigated eye-to-eye contact during therapy using TH to examine the impact on rapport building. Results of that study showed that eye-contact correlates positively with mutual engagement and being in sync with one another (client-clinician). There is a paucity of research which has investigated the challenges of establishing rapport with new clients over TH. Schwartz and DeMasi (2021) emphasise the importance of including this skill in TH training. In contrast to the clinician experience of history taking via TH, preliminary evidence suggests that the client perspective is positive. Nilsson et al. (2021) found that clients appreciated the option of distanced history taking options, especially for the increased flexibility in times and locations.

### **5.3.2 Validity of Test Administration via Telehealth**

A key finding for TH in the context of assessments was that many participants raised concerns about validity of distanced psychometric test administration. Areas of concern raised by respondents included unseen confounding variables, time keeping complications due to glitching (freezing visual or audio feed due to poor internet connection), lack of normative data and TH-specific guidelines for specific tests. This topic is too broad to explore in its entirety here, as the range of psychometric assessments is huge and each assessment carries unique criteria for validity of results. This could be a topic of interest for future research, for example a scoping review of the current psychometrics with evidence towards validity when administered via TH. Research shows that there is currently an influx of research being performed on various tests to meet the 80% increase in uptake of distanced modalities due to COVID-19 restrictions (O'Rourke et al., 2021; Paula, 2021). General guides to navigating this broad and complex topic include the British Psychological Association (2020) and recommendations by Wright, Mihura, Pade, and McCord (2020) in association with the American Psychological Association. More recently Raiford and Wright (2021) have published a practical guide on the current state of professional knowledge related to psychological TH which includes ethical and empirical considerations to the practical application of TH administration procedure. It also provides clinicians with practical checklists and information to those transitioning to TH assessment and those training in a variety of psychology training programs. According to these sources, the general consensus is that psychologists should have a good knowledge of possible risks, ethical issues, challenges and

limitations of using TH. However, there is also emphasis on the real need for assessment services to continue, even when F2F procedures are not feasible. Moreover, Paula (2021) and Bilder et al. (2020a) emphasizes the importance of documenting any limitations or variations to the test being conducted via TH, as a disclosure clearly observable alongside any results. Beyond general recommendations and guidelines, however, it is up to the individual clinician and research communities to acquire knowledge and investigate specific assessment validity and feasibility via TH delivery.

### **5.3.3 Appropriateness of Therapy and Intervention via TH**

When examining psychologists' opinions regarding appropriate use of TH as a modality of service delivery, the key finding was that therapy/intervention was both rated the most appropriate variable for transition into TH and the aspect of clinical practice which participants felt most confident using TH. This was true for both participants who have experience in TH and those who do not, which may suggest pre-conceived acceptability. The foundation of this pre-conceived acceptability may stem from the clinicians drive to be evidence-based practitioners. The concept of 'evidence' was expressed as being the most common practical consideration raised by participants when discussing their beliefs on appropriateness of TH. Therefore, evidence may be strongly connected to acceptability for participants. In light of this, there is a wide range of evidence to support TH acceptability for therapy/intervention. For example, therapy and intervention is a talk-based service and Pogoda et al. (2017) found in their study on treatment of TBI that talk based consultations transitioned well to the TH medium, assuming that a stable video and audio feed is available. Specific examples of therapies/interventions that are evidence-based via TH are treatment of depression, use of CBT, and holistic care. Osenbach et al. (2013) conducted a meta-analysis of 14 studies, showing no significant difference between effectiveness of TH vs F2F treatment of depression; Marchand et al. (2011) found CBT to be equally effective via TH as F2F; and Gurney et al. (2021) and the NZ Ministry of Māori Development (2019) found an increase in capacity for community involvement when TH is an option, because those with the equipment required to host videoconferencing were able to facilitate access for those who lacked proper equipment. In turn, this created a holistic care situation where an individual's community is involved in their rehabilitation.

The other two aspects of clinical service delivery were history taking interviews and assessment. History taking interviews were considered appropriate in specific circumstances but were not considered as appropriate as therapy/intervention. This was due to challenges establishing strong rapport when meeting clients for the first time via TH (see section 5.3.1). The aspect considered least appropriate to be conducted via TH was assessment, due to a lack of confidence in knowledge regarding tests made for remote administration (see section 5.1), lack of confidence in knowledge of evidence (see section 5.1), and concerns regarding TH-administered test validity (see 5.3.2).

## 5.4 Access to Clinical Services

Most participants believed that continuity of clinical services was valuable when F2F consultations were impractical or unavailable. This finding is consistent with several studies (Adjorlolo, 2015; Classen et al., 2021; Evans, 2018; Farmer et al., 2020; Gogia, 2019; Madigan et al., 2021; Mahoney et al., 2021; Martyr et al., 2019; Nuttman-Shwartz & Shaul, 2021; Reay et al., 2020; Simpson & Reid, 2014). In the context of this study, utilising TH to increase accessibility equity was mentioned equally in both context of general accessibility, such as overcoming physical distance, and in the context of continuity of services during COVID-19. This section will first explore the value of COVID-19 continuity via TH, before exploring non-COVID-19 related reasons for accessibility (convenience and necessity).

The COVID-19 pandemic has been a good example of the need for accessibility of clinical services when F2F consultations have been difficult or impossible. This is because accessibility of clinical services dropped due to lockdown restrictions but the need for psychological services increased (A. Pedrosa et al., 2020). Increased need for psychological services was found in various demographic groups during the pandemic, including the academic community (da Silva Ribeiro et al., 2021), school aged children and their families (Chriest, 2020), NZ essential workers such as healthcare professionals (James et al., 2021), the elderly (Plagg et al., 2020), and for appropriate services for LGBTQ+ minorities (Phillips et al., 2020). Evidence from Australia shows that TH has been successfully implemented in both rural and metropolitan contexts to allow continuity of services during the pandemic to overcome barriers (Reay et al., 2020). However, it remains important to monitor relative outcomes and effectiveness of TH as a modality for differing areas, if TH is to be implemented ongoing (Reay et al., 2020).

Participants mostly spoke positively about the convenience of TH and believed that many of their clients appreciated the ease of access. This opinion was reinforced by a systematic review of 44 studies by Kruse et al. (2017) that found client satisfaction was based on improved outcomes (20%), preference (10%), convenience (9%), affordability (8%), better communication (8%) and less time spent travelling (7%). Additionally, necessity was raised by over half of the total participants and the overwhelming majority believed that it is critical to be able to provide services when accessibility barriers to F2F are high. When participants were asked if they believed in accessibility barriers to psychological services in NZ, the response was strong. Almost half of the participants believed there are many barriers and below ideal accessibility in NZ and many others expressed concern that accessibility barriers are at crisis level. Reports by the Government Inquiry into Mental Health and Addiction (2018) and the Ministry of Health (2020) back up these claims. The reports show that the NZ healthcare system was already struggling to provide care for an increasing number of vulnerable individuals negatively impacted by poor psychological health – prior to COVID-19. Similarly, rehabilitation continuation for thousands of neuropsychological clients was interrupted by the onset of COVID-19 lockdowns (Almeda et al., 2021; James et al.,

2021; Joyce et al., 2021; A Pedrosa et al., 2020; A. Pedrosa et al., 2020; Phillips et al., 2021). All of these individuals have needed help, before, during, and will continue to after the pandemic. Results of this study showed that participants believed that TH is a preferable option to interrupted urgent care, as opposed to no care at all. Commencement or continuation of necessary care is vital because the damage of postponing urgent treatment can outweigh the benefits of waiting for F2F consultations to resume, including negative effects on mental wellbeing, effective rehabilitation, and client's abilities to return to or maintain employment (Brearly et al., 2017). Those who do not receive prompt care have an increased risk of chronic or acute physical disability, cognitive ability, family lives, community and recreational activities (Perle, 2021).

## **5.5 Importance of Telehealth-Appropriate Resources**

Of those who commented on clinician-specific variables, a key finding was the importance of adequate resources and how few believed that they had them. Only a few expressed being adequately equipped and the majority suggested that they needed further resources or upgraded resources. These included hardware, software, appropriate practice space, training, and specific normed tests. The reported need for additional or upgraded resources is likely due to the fact that TH was not used by most participants prior to COVID-19. As previously mentioned, there has been a recent uptake in the development and availability of resources for clinicians utilising TH. Globally, the COVID-19 pandemic has changed the landscape of healthcare services. Psychologists will likely need to be flexible and sometimes creative to adapt to the challenge of taking up TH. This flexibility may be more difficult for those employed by larger organisations which expect their clinicians to follow pre-set procedures or to continue to use resources optimised for F2F consultations. Results displayed signs of participants facing this challenge, when they shared differences between their preference of software and their employer's preference of software. For example, participants in private practice stated that they preferred to use Zoom due to their client's familiarity with the software. This client-familiarity with the software likely made a smoother experience due to less interruptions caused by tech-illiterate clients needing technical assistance. Additionally, it also saved time, as participants would not have had to familiarise some of their clients with the software to be able to start using TH. This freedom of choice regarding software was likely an opportunity for private practice clinicians, however private practice clinicians would also be faced with the challenge of funding their own upgrades and any new resources.

## **5.6 Privacy Concerns Regarding Client Environment**

Approximately half of the participants expressed concern about loss of control of clients' environment and subsequently an increase in privacy concerns. These concerns were not unfounded, as some participants shared experiences of breaches of privacy occurring, for example observers such as family members hidden behind the camera. This is an important find because

safeguarding privacy through control of the therapeutic environment is key to ethical practice and a protective factor for avoiding client harm (Nagy, 2011). Psychologists in NZ are specifically expected under the Code of Ethics (2022) section 1.6.2, to explain to family members that there is an expectation on them and any other member privy to sessions to protect each other's privacy. Breaches in the example of family members secretly sitting in behind the camera increase the complexity of managing privacy, because normal practice for family therapy would include agreements between all members to honour each other's privacy. This aids in safeguarding family secrets from escaping into wider social networks. There is added complexity if the family member sitting in is a minor, because private details and privacy agreements must be worded intentionally with developmentally appropriate language. Without knowledge that the additional family members are present, the practitioner may raise inappropriate topics for the secret audience. Research on the topic of privacy relating to client environment was hard to find, but similar TH breaches of privacy were recorded by Padfield (2021). She expanded on the findings of this research by empathising with consequences of the lack of privacy guarantee from a client perspective. Some of her clients experienced paranoia of who might be listening behind the door to the room they were conducting sessions. In one instance, the fear caused TH to be counter-productive and sessions had to be resumed once the client's environment changed to be more appropriate. In another instance, the fear was realised because a partner was listening in. This manifest as the catalyst which split up the relationship. Some participants in this study shared that they try to offset these privacy risks by writing up customised informed consent agreements prior to TH consultations. This is currently a requirement in many states of America and allows for the disclosure of risks that are unique to TH and the client's and clinician's responsibilities in protecting against these risks (New Mexico Nurses Association, 2021).

## **5.7 Fatigue Due to Loss of Feelings of Connection**

Fatigue was raised by one fifth of participants, explained as being due to the increased technical load distracting from being able to build a meaningful connection with clients. Shklarski et al. (2021) backs up fatigue as a challenge for clinicians practicing a large percentage of their consultations via videoconferencing, finding that the sudden transition to using TH and subsequent videoconferencing fatigue were two of the greatest challenges for clinicians during the pandemic. Sacco et al. (2015) suggests that a connection with clients becomes a protective factor against compassion fatigue. This is important because compassion satisfaction is key to quality of life in a health care career. Thapa et al. (2021) concurs with this notion, suggesting compassion satisfaction increases clients feeling of support and "being held" in challenging situations. These studies allude to the fact that when this is feeling of connection is absent, health care professionals such as psychologists are at heightened risk of fatigue and possibly subsequent burnout if the fatigue becomes chronic. This is important for quality of care because studies over time have shown that burnout can decrease the quality of healthcare provided to clients, due to

diminished capacity to give support (Carney et al., 1993; Hoge et al., 2007; Maslach & Pines, 1979). This highlights the therapeutic relationship between client and clinician is not only important for the clinician's quality of life but for recovery of clients too. Tchernegovski et al. (2021) suggests that client-practitioner relationship is key to successfully co-navigating this journey. Therefore, if one fifth of NZ psychologists are concerned about fatigue, their concern is not unfounded and creative flexibility may be required for those struggling with the challenge of connecting with clients via TH. Assisting psychologists transitioning into TH is especially important during COVID-19, because according to A. Pedrosa et al. (2020) healthcare professionals are subject to proportionately high psychological burdens.



## Chapter 6 Conclusion

This study demonstrated NZ psychologists' current experience and opinions of TH in the context of rapid increased uptake during the COVID-19 pandemic. Key findings illustrated that psychologists commented positively on the importance of continuity of clinical services when there are significant barriers to F2F consultations, appropriateness of TH for therapy/intervention, and high willingness to utilise TH in future. Participants also cautioned regarding variables such as changes in rapport dynamics, ensuring validity of remote assessment, client and clinician capacity, privacy, and compassion fatigue. These results of this study generated deeper insight into the current real-world practice of TH in NZ, by exploring the use and acceptability of TH from the perspective of clinically practicing psychologists. The study reinforced the importance of monitoring relative outcomes and effectiveness of TH for different areas of psychological practise, as requirements differed across different services and treatments. Facilitators for successful uptake of TH included provision of reliable hardware, secure software, increased evidence availability, upskilling, supervision opportunities, and organisational support.

### 6.1 Strengths and Limitations

The first strength of this study was the number of psychologists with experience in TH. Compared to Chapman's study sample, this study acquired a higher percentage of respondents with TH experience, with 90% compared to Chapman's 28%. Secondly, the data was broad enough to be exhaustive during qualitative analysis, which is important regarding trustworthiness criteria of TA (Braun et al., 2019). The limitations of the current study was the exclusion of the, Kappa ( $\kappa$ ) coefficient, which would have identified inter-rater reliability (Viera & Garrett, 2005). However, this analysis was beyond the scope of this dissertation due to the absence of multiple raters and time.

### 6.2 Implications for Future Research

This study illustrated that it remains important to monitor relative outcomes and effectiveness of TH for different areas of psychological practise, as requirements differ across different services and treatments. This highlights opportunities for deeper study into evidence of effectiveness for specific areas of practice. Of particular interest was rapport building and trigger-risk in the context of psychological history taking interviews, validity of assessments when used remotely and what adjustments to typical administration of those tests are required to maintain that validity (there are many requiring study in the context of TH), overcoming of time-keeping challenges due to glitching (freezing of live feed) during videoconferencing in the context of assessments, improvement on capacity for observation of non-verbal cues, and ways in which transition into TH could be optimised – especially regarding dissemination of evidence and research for those with no prior TH experience or study.



## Glossary of Abbreviations

**CBT.** Cognitive behavioural therapy.

**COVID-19.** The pandemic and associated lockdowns caused by SARS-CoV-2.

**EMDR.** Eye movement desensitization and reprocessing. A therapy.

**F2F.** Face to face consultations.

**NVivo.** Advanced software for analysis of qualitative data. Version 12 was used, Copyright © 2021 QSR International.

**TA.** Thematic analysis, in this case descriptive six-stage inductive thematic analysis. This is a method for analysis quantitative data using six stages to first generate codes and then over-arching themes. It is data driven analysis that does not begin with a code book but creates a code book through discovery of codes. The goal is to use the codes and themes to describe the results. Discussion occurs later with descriptive analysis.

**NZPB.** New Zealand Psychologist Board.

**SPSS.** An advanced software for quantitative analysis. Version 27 was used. Copyright © 2020 IBM Corp.

**TBI.** Traumatic brain injury.

**mTBI.** Mild traumatic brain injury, sometimes called concussion.

**TH:** Telehealth, live video and sound feed between two individuals when one is providing health care for the other.

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## Appendices

### Appendix A. Questions Asked to Gauge Professional Background Knowledge

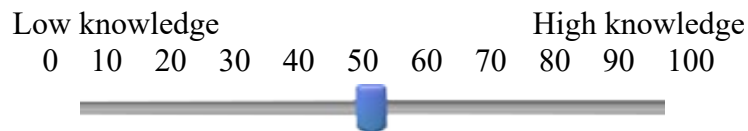
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#### Questions

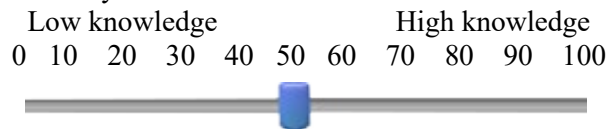
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Please estimate your level of understanding or knowledge of dimensions of telehealth practice:

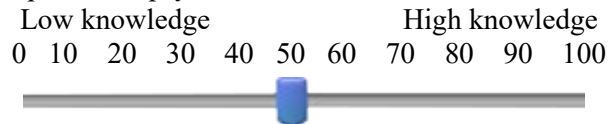
1. Knowledge of telehealth platforms/software (e.g., Zoom, CoviU etc):



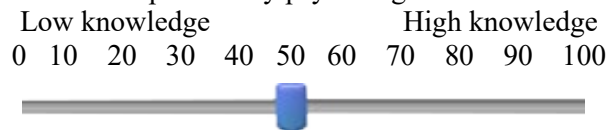
2. Knowledge of the scientific literature on the reliability of psychometrics administered remotely:



3. Knowledge of published psychometrics for remote administration:



4. Knowledge of telehealth practice by psychologists outside of New Zealand




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*Note:* For each of the above questions, a slider was provided for professionals to estimate their level of knowledge or understanding.

## Appendix B. Questions Displayed if a Professional has Utilised Telehealth

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### Questions and respondent choices:

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1. In the last year, how often have you conducted \_\_\_\_\_ via videoconference?

- I have only completed one \_\_\_\_\_ via videoconference
- More than once a year but less than once a month
- Once a month
- More than once a month but less than once a week
- Once a week
- More than once a week

2. In the last year, approximately what percentage of all \_\_\_\_\_ have you conducted via videoconference?

3. Please briefly describe the type of hardware (e.g. laptop, webcam, iPad etc.) and software (e.g. Zoom, Microsoft Teams, Skype etc.) you used to conduct \_\_\_\_\_ via videoconference.

4. Please briefly describe how you manage the transfer and storage of patient data when conducting a \_\_\_\_\_ via videoconference.

5. Please briefly describe *any* changes you made to your standard \_\_\_\_\_ so that you could conduct these via videoconference.

6. What are the main reasons you chose to conduct a \_\_\_\_\_ via videoconference?

7. Please briefly describe *any* challenges you experienced in conducting \_\_\_\_\_ via videoconference.

8. Please briefly describe any benefits of conducting a \_\_\_\_\_ via videoconference.

9. How confident are you with your ability to conduct valid \_\_\_\_\_ via videoconference?

- Not confident at all
  - Limited confidence
  - Neutral (neither confident nor not confident)
  - Somewhat confident
  - Completely confident
- 

*Note:* \_\_\_\_\_ stands in place of the three specific clinical services that being investigated: history taking interviews, psychometric/cognitive assessments, or therapy sessions/interventions.

Appendix C. Questions for Those who had not Conducted Consultations via Telehealth

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Questions and respondent choices:

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1. If you had to conduct a \_\_\_\_\_ via videoconference, how confident are you that you would be able to conduct a valid \_\_\_\_\_ via videoconference?

- Not confident at all
- Limited confidence
- Neutral (neither confident nor not confident)
- Somewhat confident
- Completely confident

2. Please briefly describe three reasons why you have not used videoconference to conduct a \_\_\_\_\_.

3. Would you conduct a \_\_\_\_\_ via videoconferencing in the future?

- Yes
- Maybe
- No

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*Note:* \_\_\_\_\_ appears in place of the specific aspect of clinical service delivery that was being asked about, either history taking interviews, cognitive/psychometric assessments, or therapy sessions.

Appendix D. Sample of Descriptives ( $N = 88$ )

Variable	<i>n</i>	%
Highest Degree in Psychology		
Masters	17	19.3%
PGDip Psychology	29	33.0%
PsyD	1	1.1%
Doctor of Psychology (DPsych)	21	23.9%
PhD	20	22.7%
Clinical Practice Location*		
> 100,000 (City population)	71	80.7%
10,000-99,999 (Moderate population)	21	23.9%
< 10,000 (Smaller or rural population)	7	8.0%
How Often That Their Clients Had to Drive 60+ minutes (in the Last Year)		
Never, unless there is traffic or some other delay	19	21.6%
More than once a year but less than once a month	26	29.5%
Once a month	10	11.4%
More than once a month but less than once a week	17	19.3%
Once a week	12	13.6%
More than once a week	4	4.5%
How Often the Psychologist Had to Drive 60+ minutes to Their Client (in the Last Year)		
Never, unless there is traffic or some other delay	46	52.3%
More than once a year but less than once a month	18	20.5%
Once a month	4	4.5%
More than once a month but less than once a week	10	11.4%
Once a week	7	8.0%
More than once a week	3	3.4%
Patient Ages*		
Young Children (< 5)	11	12.5%
Children (5-12)	28	31.8%
Adolescents (13-17)	45	51.1%
Young adults (18-24)	67	76.1%
Adults (25-64)	74	84.1%
Older Adults (> 65)	49	55.7%
Work Setting*		
District Health Boards	30	34.1%
Hospital/inpatient	6	6.8%
Community mental health service	9	10.2%
Private practice	50	56.8%
ACC-funded Rehabilitation	28	31.8%

Variable	<i>n</i>	%
ACC-funded Rehabilitation	28	31.8%
NGO/Charity	3	3.4%
Corrections/Forensic/Legal	7	8.0%
University clinic	2	2.3%
Research	3	3.4%
Work Focus*		
Mental health disorders	65	73.9%
Substance use disorders	7	8.0%
Acquired brain injury	33	37.5%
Neurodegenerative disorders	14	15.9%
Stroke	9	10.2%
Other neurological disorders (E.g., Genetic)	5	5.7%
Forensic	7	8.0%
Family or couple therapy	13	14.8%
Neurodevelopmental disorders	18	20.5%
Learning disabilities	11	12.5%
Chronic health conditions	26	29.5%
Other (E.g., Supervision)	7	8.0%

*NOTE:* \* = Multiple choice was allowed.



## Appendix E. Descriptives of Knowledge Levels

	<i>M</i>	<i>SD</i>
Knowledge of published psychometrics for remote administration	33.07	28.60
Knowledge of the scientific literature on the reliability of distanced psychometrics	40.10	30.14
Knowledge of telehealth practice by psychologists outside of NZ	42.33	28.51
Knowledge of dimensions of telehealth platforms/software	68.13	20.45

## Appendix F. Hardware and Software used, by Area of Clinical Practice

	History taking ( <i>n</i> = 62)	Assessments ( <i>n</i> = 19)	Therapy/intervention ( <i>n</i> = 70)
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
<b>Software</b>			
Zoom	48 (77.4%)	12 (63.2%)	51 (72.9%)
Doxy.me	16 (25.8%)	2 (10.5%)	16 (22.9%)
Skype	4 (6.5%)	-	4 (5.7%)
Microsoft Teams	4 (6.5%)	-	4 (5.7%)
Google Meet	3 (4.8%)	1 (5.3%)	-
WhatsApp	2 (3.2%)	-	2 (2.9%)
Facetime	2 (3.2%)	-	2 (2.9%)
Sanvello	1 (1.6%)	-	1 (1.4%)
Facebook Messenger	1 (1.6%)	-	-
Cliniko	1 (1.6%)	-	-
Novopsych	-	1 (5.3%)	-
“Remote PAI and similar”	-	1 (5.3%)	-
“Pearson WAIS material”	-	1 (5.3%)	-
Unspecified	-	1 (5.3%)	-
Bilateral Base (or other remote EMDR)	1 (1.6%)	-	2 (2.9%)
Adobe Acrobat	-	-	1 (1.4%)
PowerPoint	-	-	1 (1.4%)
Signal	-	-	1 (1.4%)
WeChat	-	-	1 (1.4%)
<b>Hardware</b>			
Laptop computers	37 (59.7%)	10 (52.6%)	32 (45.7%)
Desktop computers	12 (19.4%)	3 (15.8%)	13 (18.6%)
Webcams	11 (17.7%)	3 (15.8%)	9 (12.9%)
Smartphones	7 (11.3%)	1 (5.3%)	7 (10%)
Inbuilt cameras	6 (9.7%)	-	6 (8.6%)
iPads	4 (6.5%)	1 (5.3%)	5 (7.1%)
Tablets	-	-	2 (2.9%)
Remarkable Tablets	2 (3.2%)	-	2 (2.9%)
Additional cameras	-	1 (5.3%)	-
Bluetooth headphones	-	-	1 (1.4%)

*NOTE:* Percentages are based on the number of participants who commented on each section, *i.e.*, total of 62 for history taking.

## Appendix G. Codebook Generated from Open-ended Responses

Name of code	Description	Number of comments coded
Access to Healing Services	THEME	-
Accessibility	Non-COVID-19 related	182
Convenience	Options available but telehealth is easier or better suited (cannot co-code with necessity)	67
COVID-19 Continuity	Continuation or commencement of services during lockdowns.	146
Internet reliability	(general)	59
Necessity	Urgent and/or no other option (cannot co-code with convenience or be solely COVID-19 related)	87
Options	A want for general freedom of choice.	50
Telephone instead	No video feed.	3
Changes in the therapeutic relationship	THEME	-
Dynamics	Shifts in therapeutic relationship dynamics.	19
Engagement variables	Challenged or opportunities regarding engagement.	30
Insight	Insight into home environment or more of clients life than during F2F.	16
Non-verbal cues	Body language, physical symptoms such as leg shake, facial expressions.	42
Rapport	Establishing or maintaining a mutually valuable empathetic relationship.	53
Risk	Safety of client and/or clinician, risk variables.	47
Client and Clinician Specific Considerations	THEME	-

Name of code	Description	Number of comments coded
Client considerations	SUB-THEME	-
Client capacity	Physical, cognitive, age, psychological capacity (NOT tech literacy or COVID-19 or accessibility related)	40
Client perspective	Client experience as a customer.	36
Client preference and consent	When it is client-driven (+ consent merged as only 8 mentions on consent).	30
Client resources	Access to hardware/software/reliable internet/hearing aids.	23
Client environment	Client's home environment or space in which they videoconference from.	66
Tech Literacy	Familiarity or ability level using required hardware and software.	16
Clinician Considerations	SUB-THEME	-
Clinician preference	Expressions of personal preference as opinion.	36
Knowledge and experience	Confidence or lack of confidence in own research or ability.	50
Not assessment	Wouldn't do assessment via Telehealth, strong directed scepticism.	14
Organisational variables	Support or acceptance from workplace, referrers, Psychologist Board.	28
Peer acceptance	Including multi-disciplinary teams, other psychologists, professors.	12
Quality of service	(general)	47
Resourcing		-
Equipment availability	Hardware/software/reliable internet/specialist materials.	58
Equipment quality	Hardware/software/reliable internet/specialist materials.	41
Practice space	Appropriate space for clinician to videoconference from.	12
Training and Supervision	Lack of or presence of adequate training and supervision opportunities.	41

Name of code	Description	Number of comments coded
Scepticism	General and strong scepticism towards Telehealth.	33
Practical Considerations	THEME	-
Efficiency	(general)	21
Evidence	(general)	55
Fatigue	Exhaustion or over burden from increased load.	26
No need	Aspect not part of practice.	34
Tech issues	Glitches, malfunctions, poor performance, or interruptions by technology.	20
Test admin practicalities	(general)	47
Validity of test administration	Assessment specific comments regarding Telehealth rigour.	50

*NOTE:* Participants may have raised multiple topics or raised the same topic in multiple open-ended responses, therefore the number of comments coded does not equal the number of participants.

## Appendix H. Ethics Approval Letter



TE WĀNANGA ARONUI  
O TĀMAKI MAKĀU RAU

### 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](mailto:ethics@aut.ac.nz)  
[www.aut.ac.nz/researchethics](http://www.aut.ac.nz/researchethics)

16 August 2021

Susan Mahon  
Faculty of Health and Environmental Sciences

Dear Susan

Re Ethics Application: **21/277 Psychologists' views and experiences of telehealth in clinical context of Aotearoa New Zealand: A mixed methods evaluation**

Thank you for providing evidence as requested, which satisfies the points raised by the Auckland University of Technology Ethics Committee (AUTEC).

Your ethics application has been approved for three years until 16 August 2024.

#### 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.
8. 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](mailto: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: [gjb7301@autuni.ac.nz](mailto:gjb7301@autuni.ac.nz); [james.webb@aut.ac.nz](mailto:james.webb@aut.ac.nz)

## Appendix I. Participant Information Sheet Page One of Two

AUT

TE WĀNANGA ARONUI  
O TĀMAKI MAKAU RAU

## Participant Information Sheet

**Date Information Sheet Produced:**

07 July 2021

**Project Title**

Videoconferencing Technology for Clinical Purposes: Opinions and Experience of New Zealand Psychologists and Neuropsychologists

**An Invitation**

My name is Amanda Olson and this project is a part of my honors dissertation, towards a Bachelor of Health Science (Psychology) with honors. I am working in collaboration with registered neuropsychologists Dr Susan Mahon and Dr James Webb. We are conducting an anonymous survey to assess the current experience and perspectives of practicing clinicians on remote delivery of clinical services. More specifically, delivery of history-taking interviews, cognitive and psychometric assessment, and therapy sessions via *video-based conferencing technologies (telehealth)*. Even if you have never used this kind of technology, your opinion is still valuable to this project. This research is important because there is currently no New Zealand specific data illustrating psychologists' perceptions or experiences of this form of delivery. The findings of this research may assist clients and professionals in making informed decisions about remote testing. So, thank you for considering contributing your opinions and experiences of assessment via telehealth.

**Link to Survey**

[https://aut.au1.qualtrics.com/jfe/form/SV\\_8Hbj6ZNwzPiLd4](https://aut.au1.qualtrics.com/jfe/form/SV_8Hbj6ZNwzPiLd4)

**What is the purpose of this research?**

The core research questions are: *"What are psychologists' and neuropsychologists' views and experiences of telehealth as a means of clinical delivery?"* and *"How can this information be applied to the context of healthcare in Aotearoa New Zealand?"*

In New Zealand and around the world psychological services are urban centric in nature. This is a problem, because it creates accessibility restrictions and inequalities regarding clinical psychological and neurological services for those in need. There is currently a research gap regarding the opinions and experience of clinical professionals in conducting remote delivery in New Zealand. So, the aim of this study is to collect and present this information. The likely outputs of this data will be a student dissertation, journal article and conference paper. Future planned use of the data includes co-writing a paper with a team in Australia who conducted a similar study abroad, to compare results cross-Tasman. 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?**

For this study, we are seeking neuropsychologists and psychologists who currently work in a clinical setting in New Zealand. As potential participants of this study, you were contacted via the NZSIGN group, NZCCP or via word of mouth because you are doing clinical work as a component of your role. We are also working with the NZ Psychological Society and to spread the word via their newsletter.

**How do I agree to participate in this research?**

Your participation in this study is completely voluntary. You can withdraw your participation at any time while completing the survey by closing the browser. Participation in this research is anonymous and you will not be able to withdraw your responses once you have submitted the survey.

**What will happen in this research?**

The survey will be completed via Qualtrics, which can be accessed anonymously by following the link provided to you or the link located at the top of this page. A mixed methods approach will be used to analyse the anonymous responses, replicating a similar study based in Australia in 2018. Research techniques will include summarizing open-ended responses using thematic analysis and descriptive analysis of quantitative data.

## Appendix J. Participant Information Sheet Page Two of Two

### What are the discomforts and risks?

We do not expect any harm or discomfort to result from participation in this study, other than the possible inconvenience of the time required to complete the survey.

### What are the benefits?

There is no payment or reward associated with participation in this research. However, by participating you will be contributing data to further our knowledge of the current perspectives of New Zealand psychologists on the use of telehealth within our field. If significant factors are uncovered, this may contribute towards increased accessibility of psychometric and neurological services for those who are disadvantaged. Completion of this research will also contribute towards Amanda's honours dissertation, which is a degree on the pathway towards registering as a counselling psychologist. There is currently a shortage of registered psychologists in New Zealand.

### How will my privacy be protected?

The information that you provide will be non-identifiable and therefore will remain completely confidential. The data collected will be stored in accordance with Auckland University of Technology regulations.

### What are the costs of participating in this research?

This survey should take you no longer than 15 minutes to complete.

### What opportunity do I have to consider this invitation?

This survey will close for responses at the end of September.

### Will I receive feedback on the results of this research?

Discussed results of this survey will be available via peer reviewed publication. A live summary of the results can be accessed via a link and passcode provided upon completion of the survey.

### 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, Associate Professor Susan Mahon, [susan.mahon@aut.ac.nz](mailto:susan.mahon@aut.ac.nz), (09) 921 9999 extension 7438.

Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTC, [ethics@aut.ac.nz](mailto:ethics@aut.ac.nz), (+649) 921 9999 ext 6038.

### 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:**

Amanda Olson  
Auckland University of Technology  
Email: [gjb7301@autuni.ac.nz](mailto:gjb7301@autuni.ac.nz)

Dr James Webb  
Auckland University of Technology  
Email: [james.webb@aut.ac.nz](mailto:james.webb@aut.ac.nz)

#### **Project Supervisor Contact Details:**

Dr Susan Mahon  
[susan.mahon@aut.ac.nz](mailto:susan.mahon@aut.ac.nz),  
Phone: +64 (09) 921 9999 - extension 7438.

Approved by the Auckland University of Technology Ethics Committee on 16<sup>th</sup> August 2021, AUTC Reference number 21/277.



## Appendix K. Recruitment Notice Sent via Email to Organisations for Publishing

Requesting opinions and experience of psychologists and neuropsychologists on  
videoconferencing for clinical purposes

My name is Amanda Olson and I am undertaking a dissertation towards a Bachelor of Health Science (psychology) with Honors. I would like to invite you to participate in a study on the experience and opinions of psychologists regarding remote application of clinical practices (such as history taking, cognitive/psychometric assessment, and therapy sessions).

I am working in collaboration with Dr Susan Mahon and Dr James Webb, Senior Lecturers at AUT and registered clinical psychologists and neuropsychologists. We are conducting an anonymous survey to assess the current experience and perspectives on the use of *video-based conferencing technologies (telehealth)*. Even if you have never used this kind of technology, your opinion is still valuable to this project if you are working in a clinical setting.

This research is important because there is currently no New Zealand specific data illustrating psychologists' /neuropsychologists' perceptions or experiences on this topic. The findings of this research may assist clients and professionals in making informed decisions about remote testing and use of telehealth modalities.

The questionnaire is completely anonymous and will take no longer than 15 minutes of your time. It is available at the following link until the end of October 2021:

[https://aut.au1.qualtrics.com/jfe/form/SV\\_8Hbj6ZNwzPiLd4](https://aut.au1.qualtrics.com/jfe/form/SV_8Hbj6ZNwzPiLd4)

Thank you for considering contribution of your experience and opinions

*For any questions or concerns regarding the research, please contact:*

Primary Researcher	Primary Supervisors	
Amanda Olson	Dr Susan Mahon	Dr James Webb
gjb7301@autuni.ac.nz	susan.mahon@aut.ac.nz	james.webb@aut.ac.nz



## Psychologists' Views on the Use of Videoconferencing for Psychometric and/or Cognitive Testing

---

Start of Block: Default Question Block

Q1 Informed Consent

Q2 Do you consent to continuing with this survey?

☐ YES (1)

☐ NO (2)

---

*Skip To: End of Survey If Do you consent to continuing with this survey? = NO*

---

Q3 Please indicate your registration status:

- ☐ Trainee psychologist (4)
- ☐ Intern Psychologist (3)
- ☐ Neuropsychologist scope of practice (1)
- ☐ General scope of practice (2)
- ☐ Clinical Psychologist scope of practice (5)
- ☐ Counselling Psychologist scope of practice (6)
- ☐ Educational Psychologist scope of practice (7)
- ☐ Health Psychologist scope of practice (8)
- ☐ Organisational Psychologist (11)
- ☐ Not currently working or studying as a psychologist (9)

*Skip To: End of Survey If Please indicate your registration status: = Intern Psychologist*

*Skip To: End of Survey If Please indicate your registration status: = Trainee psychologist*

*Skip To: End of Survey If Please indicate your registration status: = Not currently working or studying as a psychologist*

Q4 Are you currently working in a clinical setting?

- ☐ Yes (1)
- ☐ No (2)

*Skip To: End of Survey If Are you currently working in a clinical setting? = No*

Q5 Gender:

- ☐ Male (1)
  - ☐ Female (2)
  - ☐ Non-binary (3)
  - ☐ Prefer not to say (4)
- 

Q6 Which age group do you belong to?

- ☐ 20-29 (1)
  - ☐ 30-39 (2)
  - ☐ 40-49 (3)
  - ☐ 50-59 (4)
  - ☐ 60-69 (5)
  - ☐ 70-79 (6)
  - ☐ 80+ (14)
-

Q7 What is your highest degree in psychology?

☐ Masters (1)

☐ PGDip Psychology (2)

☐ Doctor of Psychology (DPsych) (3)

☐ PhD (4)

☐ Other (please specify): (5) \_\_\_\_\_

-----

Q8 How many years have you been working as a psychologist? (please exclude career breaks, e.g., maternity leave; include registrar training, if relevant):

\_\_\_\_\_

-----

Q9 What best describes your current employment status in psychology? (please include time spent across multiple roles):

☐ Full-time (1)

☐ Part-time (2)

☐ Casual or varied (3)

-----

Q10 What is your primary work setting? (select all that apply):

- ☐ DHB (1)
  - ☐ Hospital/inpatient (17)
  - ☐ Community mental health service (2)
  - ☐ Private practice (3)
  - ☐ ACC-funded Rehabilitation (4)
  - ☐ NGO/Charity (8)
  - ☐ Corrections/Forensic setting (10)
  - ☐ Business/corporate (13)
  - ☐ University clinic (5)
  - ☐ Religious organisation (11)
  - ☐ School (16)
  - ☐ Other (please specify): (7)
- 

-----

Q11 Where is your clinical practice primarily located? (you may select multiple if you have multiple clinic locations):

- ☐ Urban center population > 100,000 (1)
  - ☐ Moderate population of 10,000 - 99,999 (2)
  - ☐ Smaller or rural population < 10,000 (3)
- 

Q12 *In the last year*, how often have you seen clients that have to drive 60+ minutes to reach your clinic?

- ☐ Never, unless there is traffic or some other delay (1)
  - ☐ More than once a year but less than once a month (2)
  - ☐ Once a month (3)
  - ☐ More than once a month but less than once a week (4)
  - ☐ Once a week (5)
  - ☐ More than once a week (6)
-

Q13 *In the last year*, how often have *YOU* traveled 60+ minutes to see a client?

- ☐ Never, unless there is traffic or some other delay (1)
  - ☐ More than once a year but less than once a month (2)
  - ☐ Once a month (3)
  - ☐ More than once a month but less than once a week (4)
  - ☐ Once a week (5)
  - ☐ More than once a week (6)
-



Q14 What are your referral sources? (select all that apply):

- ☐ ACC/Insurance (12)
  - ☐ Primary care physicians (1)
  - ☐ Neurologists/Neurosurgeons (3)
  - ☐ Psychiatrists (4)
  - ☐ Geriatricians (5)
  - ☐ Rehabilitation physicians (6)
  - ☐ Allied health staff (7)
  - ☐ Other psychologists (8)
  - ☐ Legal professionals (9)
  - ☐ Multidisciplinary teams (10)
  - ☐ Self-referral (11)
  - ☐ Educational facility (15)
  - ☐ Other/s (please specify): (14)
- 

-----

Q15 What is the age of your clients? (select all that apply):

- ☐ Children younger than 5 (1)
  - ☐ Children between 5 and 12 (2)
  - ☐ Adolescents (13-17) (3)
  - ☐ Young adults (18-24) (4)
  - ☐ Adults (25-64) (5)
  - ☐ Older adults (65+) (6)
-

Q16 What client group is the primary focus of your clinical work? (select all that apply):

- ☐ Mental health disorders (6)
  - ☐ Alcohol and other drug use disorders (2)
  - ☐ Acquired brain injury (e.g., traumatic brain injury, stroke) (1)
  - ☐ Neurodegenerative disorders (3)
  - ☐ Stroke (4)
  - ☐ Other neurological disorders (please specify): (5)
- 

- ☐ Forensic (15)
  - ☐ Family or couple therapy (12)
  - ☐ Neurodevelopmental disorders (9)
  - ☐ Learning disabilities (16)
  - ☐ Chronic health conditions (18)
  - ☐ Other (please specify): (10)
- 

-----

Q17 What is the purpose of the psychological and/or cognitive assessments you conduct? (select all that apply):

- ☐ Form a working hypothesis (1)
  - ☐ Contributing to a diagnostic question (2)
  - ☐ Informing management/rehabilitation program (3)
  - ☐ Capacity assessment (4)
  - ☐ Discharge planning (5)
  - ☐ Medico-legal/forensic opinion (6)
  - ☐ Assessment of treatment response (7)
  - ☐ Education planning (8)
  - ☐ Research (9)
  - ☐ Other (please specify): (10)
- 

-----

Q18 Do you undertake any of the following in your current clinical role? (select all that apply):

- ☐ History taking interviews (1)
- ☐ Cognitive or Psychometric Assessments (2)
- ☐ Intervention/therapy sessions (4)
- ☐ Client and/or family feedback sessions (3)

End of Block: Default Question Block

---

Start of Block: Estimate knowledge

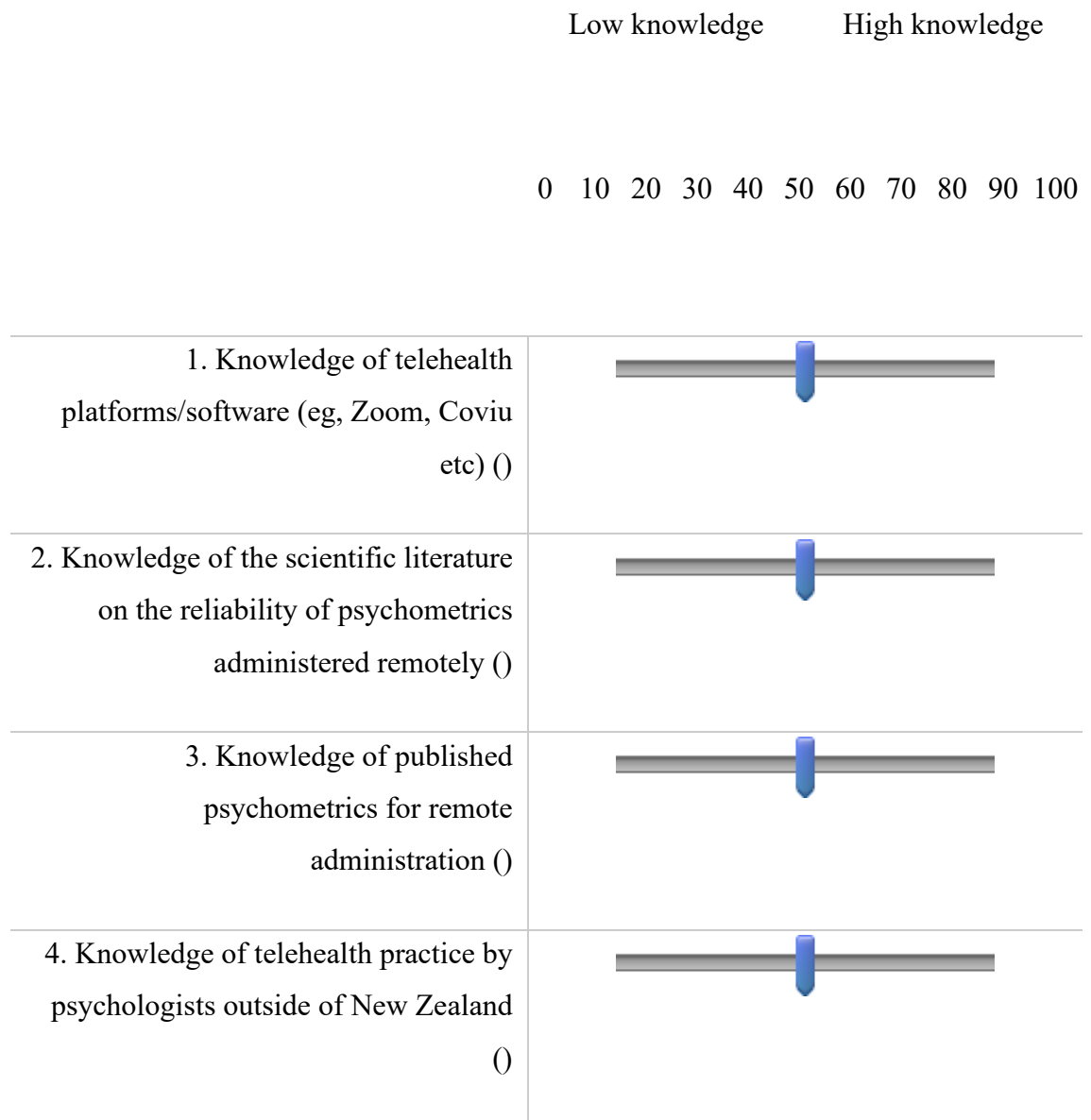
Q19 In your opinion, are there **accessibility barriers** to the provision of psychology services in New Zealand? (eg. cost, location, transport)

- ☐ Very few or no barriers / good accessibility (1)
  - ☐ Some barriers / okay accessibility (2)
  - ☐ undecided / need more data (3)
  - ☐ Many barriers / below ideal accessibility (4)
  - ☐ Accessibility crisis (5)
- 

Q20 The remainder of this survey will ask about your experience using videoconferencing (i.e., telehealth). You can still answer the following questions if you have not previously used videoconferencing in your practice.

---

Q21 Please estimate your level of *understanding* or *knowledge* of dimensions of telehealth practice...



End of Block: Estimate knowledge

Start of Block: History taking

Q22 Have you ever conducted a neuropsychological and/or psychological history taking interview(s) via videoconference (telehealth)?

- ☐ Yes (1)
- ☐ No (2)
- ☐ No, but I have using other technology (i.e. telephone or email) (3)

*Skip To: Q32 If Have you ever conducted a neuropsychological and/or psychological history taking interview(s) via... != Yes*

*Skip To: Q23 If Have you ever conducted a neuropsychological and/or psychological history taking interview(s) via... = Yes*

Q23 In the last year, how often have you conducted history taking interviews via videoconference (telehealth)?

- ☐ I have only completed one history taking interview via videoconference (1)
- ☐ More than once a year but less than once a month (2)
- ☐ Once a month (3)
- ☐ More than once a month but less than once a week (4)
- ☐ Once a week (5)
- ☐ More than once a week (6)

Q24 In the last year, approximately what percentage of all history taking interviews have you conducted via videoconference?

---

Q25 Please briefly describe the type of hardware (eg. laptop, webcam, ipad etc) and software (eg. Zoom, Microsoft Teams, Skype etc) you used to conduct a history taking interview(s) via videoconferencing:

---

---

Q26 How do you manage the transfer and storage of patient data when conducting a history taking interview(s) via videoconference?

---

---

Q27 Please briefly describe any changes you made to your standard history taking interview so that you could conduct these via videoconference:

---

---

Q28 What are the main reasons you chose to conduct a history taking interview(s) via videoconference?

---

---

Q29 Please briefly describe *any* challenges you experienced in conducting a history taking interview(s) via videoconference:

---



---

Q30 Please briefly describe *any* benefits of conducting a history taking interview(s) via videoconference:

---

---

Q31 How confident are you with your ability to conduct valid history taking interviews via videoconference?

- ☐ Not confident at all (1)
- ☐ Limited confidence (2)
- ☐ Neutral (neither confident nor not confident) (3)
- ☐ Somewhat confident (4)
- ☐ Completely confident (5)

*Skip To: Q34 If How confident are you with your ability to conduct valid history taking interviews via videoconfer... = Not confident at all*

*Skip To: Q34 If How confident are you with your ability to conduct valid history taking interviews via videoconfer... = Limited confidence*

*Skip To: Q34 If How confident are you with your ability to conduct valid history taking interviews via videoconfer... = Neutral (neither confident nor not confident)*

*Skip To: Q34 If How confident are you with your ability to conduct valid history taking interviews via videoconfer... = Somewhat confident*

*Skip To: Q34 If How confident are you with your ability to conduct valid history taking interviews via videoconfer... = Completely confident*

---

**Display This Question:**

*If Have you ever conducted a neuropsychological and/or psychological history taking interview(s) via... != Yes*

Q32 If you had to conduct a history taking interview via videoconference, how confident are you that you would be able to conduct a valid history taking interview via videoconference?

- ☐ Not confident at all (1)
- ☐ Limited confidence (2)
- ☐ Neutral (neither confident nor not confident) (3)
- ☐ Somewhat confident (4)
- ☐ Completely confident (5)

---

*Display This Question:*

*If Have you ever conducted a neuropsychological and/or psychological history taking interview(s) via... != Yes*

Q33 Please briefly describe any reasons why you have not used videoconferencing to conduct a history taking interview(s):

---

---

Q34 Would you conduct history taking interviews via videoconferencing in the future?

- ☐ Yes (1)
- ☐ Maybe (2)
- ☐ No (3)
- ☐ No, but maybe over telephone (4)

End of Block: History taking

---

**Start of Block: Cognitive/Psychometric assessment**

Q35 The following questions refer specifically to cognitive or psychometric assessment, but are similar to those in the history taking section. If you completed the history taking section and your response to a question is exactly the same, you may indicate this by writing "same as history taking section".

---

Q36 Have you ever conducted a cognitive or psychometric assessment(s) via videoconference?

- ☐ Yes (1)
- ☐ No (2)
- ☐ No, but I have used other distance means (e.g. homework assignments, online assessments, etc) (3)

*Skip To: Q44 If Have you ever conducted a cognitive or psychometric assessment(s) via videoconference? != Yes*

*Skip To: Q37 If Have you ever conducted a cognitive or psychometric assessment(s) via videoconference? = Yes*

---

Q37 In the last year, how often have you conducted cognitive or psychometric assessments via videoconferencing?

- ☐ I have only completed one assessment session via videoconference (1)
- ☐ More than once a year but less than once a month (2)
- ☐ Once a month (3)
- ☐ More than once a month but less than once a week (4)
- ☐ Once a week (5)
- ☐ More than once a week (6)

---

Q38 In the last year, approximately what percentage (%) of all cognitive assessments have you conducted via videoconference?

---

---

Q39 Please briefly describe the type of hardware and software you used to conduct an assessment(s) via videoconferencing:

---

---

Q40 Please briefly describe any changes you made to your standard assessment so that you could conduct these via videoconference:

---

Q41 What are the main reasons you chose to conduct a cognitive or psychometric assessment(s) via videoconference?

---

Q42 Please briefly describe *any* challenges or benefits you experienced in conducting a cognitive or psychometric assessment(s) via videoconference:

---

Q43 How confident are you with your ability to conduct valid cognitive or psychometric assessments via videoconference?

- ☐ Not confident at all (1)
- ☐ Limited confidence (2)
- ☐ Neutral (neither confident nor not confident) (3)
- ☐ Somewhat confident (4)
- ☐ Completely confident (5)

*Skip To: Q46 If How confident are you with your ability to conduct valid cognitive or psychometric assessments vi... = Not confident at all*

*Skip To: Q46 If How confident are you with your ability to conduct valid cognitive or psychometric assessments vi... = Limited confidence*

*Skip To: Q46 If How confident are you with your ability to conduct valid cognitive or psychometric assessments vi... = Neutral (neither confident nor not confident)*

*Skip To: Q46 If How confident are you with your ability to conduct valid cognitive or psychometric assessments vi... = Somewhat confident*

*Skip To: Q46 If How confident are you with your ability to conduct valid cognitive or psychometric assessments vi... = Completely confident*

*Display This Question:*

*If Have you ever conducted a cognitive or psychometric assessment(s) via videoconference? != Yes*

Q44 If you had to conduct a cognitive or psychometric assessment via videoconference, how confident are you that you would be able to conduct a valid assessment via videoconference?

- ☐ Not confident at all (1)
- ☐ Limited confidence (2)
- ☐ Neutral (neither confident nor not confident) (3)
- ☐ Somewhat confident (4)
- ☐ Completely confident (5)

*Display This Question:*

*If Have you ever conducted a cognitive or psychometric assessment(s) via videoconference? != Yes*

Q45 Please briefly describe *any* reasons why you have not used videoconference to conduct a cognitive or psychometric assessment(s):

---

Q46 Would you conduct cognitive or psychometric assessment via videoconferencing in the future?

- ☐ Yes (1)
- ☐ Maybe (2)
- ☐ No (3)

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**End of Block: Cognitive/Psychometric assessment**

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**Start of Block: Therapy/intervention sessions**

Q47 The following questions refer specifically to therapy/intervention sessions but are similar to those in the previous sections. If your response to a question is exactly the same as a previous section, you may indicate this by writing "same as history/assessment section."

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Q48 Have you ever delivered a therapy/intervention session via videoconferencing (telehealth)?

- ☐ Yes (1)
- ☐ No (2)
- ☐ No, but I have via telephone or other distance means (no video) (3)

*Skip To: Q58 If Have you ever delivered a therapy/intervention session via videoconferencing (telehealth)? != Yes*

*Skip To: Q49 If Have you ever delivered a therapy/intervention session via videoconferencing (telehealth)? = Yes*

-----

Q49 In the last year, how often have you delivered a therapy/intervention session via videoconferencing (telehealth)?

- ☐ I have only completed one history taking interview via videoconference (1)
  - ☐ More than once a year but less than once a month (2)
  - ☐ Once a month (3)
  - ☐ More than once a month but less than once a week (4)
  - ☐ Once a week (5)
  - ☐ More than once a week (6)
- 

Q50 In the last year, approximately what percentage of all therapy sessions/interventions have you delivered via videoconferencing?

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Q51 Please briefly describe the type of hardware and software you used to deliver therapy sessions/interventions via videoconferencing:

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Q52 How do you manage the transfer and storage of client data after delivering a therapy session/intervention via videoconferencing?

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Q53 Please briefly describe any changes you made to your standard therapy sessions/intervention delivery, so that you could conduct these via videoconferencing:

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Q54 What are the main reasons you chose to deliver a therapy session/intervention via videoconferencing?

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Q55 Please briefly describe any challenges or concerns you experienced when delivering therapy sessions/interventions via videoconferencing:

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Q56 Please briefly describe any benefits of delivering therapy sessions/interventions via videoconferencing:

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Q57 How confident are you with your ability to deliver a therapy session/intervention via videoconferencing?

- ☐ Not confident at all (1)
- ☐ Limited confidence (2)
- ☐ Neutral (neither confident nor not confident) (3)
- ☐ Somewhat confident (4)
- ☐ Completely confident (5)

*Skip To: Q60 If How confident are you with your ability to deliver a therapy session/intervention via videoconfer... = Not confident at all*

*Skip To: Q60 If How confident are you with your ability to deliver a therapy session/intervention via videoconfer... = Limited confidence*

*Skip To: Q60 If How confident are you with your ability to deliver a therapy session/intervention via videoconfer... = Neutral (neither confident nor not confident)*

*Skip To: Q60 If How confident are you with your ability to deliver a therapy session/intervention via videoconfer... = Somewhat confident*

*Skip To: Q60 If How confident are you with your ability to deliver a therapy session/intervention via videoconfer... = Completely confident*

*Display This Question:*

*If Have you ever delivered a therapy/intervention session via videoconferencing (telehealth)? != Yes*

Q58 If you had to deliver a therapy session/intervention via videoconferencing, how confident are you that you would be able to deliver a useful therapy session/intervention via videoconferencing?

- ☐ Not confident at all (1)
- ☐ Limited confidence (2)
- ☐ Neutral (neither confident nor not confident) (3)
- ☐ Somewhat confident (4)
- ☐ Completely confident (5)

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*Display This Question:*

*If Have you ever delivered a therapy/intervention session via videoconferencing (telehealth)? != Yes*

Q59 Please briefly describe any reasons why you have not used videoconferencing to deliver a therapy session/intervention:

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Q60 Would you conduct therapy sessions/interventions via videoconferencing in the future?

- ☐ Yes (1)
- ☐ Maybe (2)
- ☐ No (3)

End of Block: Therapy/intervention sessions

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Start of Block: Final questions

Q61 Please outline what resources you would need (e.g., evidence, supplies, training, peer acceptance) to use or continue to use videoconferencing for clinical purposes

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Q62 Assuming client consent and that you are trained and resourced, when do you think telehealth approaches are appropriate for history taking...

- ☐ In all circumstances (1)
- ☐ In most circumstances (4)
- ☐ In specific circumstances (2)
- 
- ☐ Never (3)

-----

Q63 Assuming client consent and that you are trained and resourced, when do you think telehealth approaches are appropriate for cognitive testing/administering psychometrics...

- ☐ In all circumstances (1)
- ☐ In most circumstances (4)
- ☐ In specific circumstances (2)
- 
- ☐ Never (3)
-

Q64 Assuming client consent and that you are trained and resourced, when do you think telehealth approaches are appropriate for therapy/intervention...

- ☐ In all circumstances (1)
- ☐ In most circumstances (4)
- ☐ In specific circumstances (2)
- 
- ☐ Never (3)

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Q65 Do you have any further feedback, opinions or experience you would like to contribute?

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End of Block: Final questions

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