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ORIGINAL RESEARCH

Perceptions About the Efficacy and Acceptability of Telephone and Video-Delivered Allied Health Care for Adults With Disabilities During the COVID-19 Pandemic: A Cross-sectional National Survey



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Abstract

Objective: To investigate and compare perceptions about the efficacy and acceptability of allied health care delivered via telephone and video call for adults with disabilities during the COVID-19 pandemic.

Design: Cross-sectional national survey.

Setting: Participants who accessed occupational therapy, physiotherapy, psychology, or speech pathology care via telephone or via video call from June to September 2020.

Participants: Five hundred eighty-one adults with permanent or significant disabilities, or their carers, partners, or family members, who were funded by the Australian National Disability Insurance Scheme.

Interventions: Not applicable.

Main Outcome Measures: Experiences (eg, safety, efficacy, ease of use) with telephone and video-delivered care. Data were analyzed by calculating response proportions and chi-square tests to evaluate differences in experiences between allied health professions and between telephone and video modalities.

Results: Responses were obtained for 581 adults with disabilities. There was no evidence of differences between experiences with telephone or video-delivered services or across allied health professions. Overall, 47%-56% of respondents found telehealth technology easy to use (vs 17%-26% who found it difficult), 51%-55% felt comfortable communicating (vs 24%-27% who felt uncomfortable), 51%-67% were happy with the privacy and/or security (vs 6%-9% who were unhappy), 74% were happy with the safety (vs 5%-7% who were unhappy), and 56%-64% believed the care they received was effective (vs 17% who believed it was ineffective). Despite this, 48%-51% were unlikely to choose to use telephone or video consultations in the future (vs 32%-36% who were likely).

Conclusions: Adults with disabilities in Australia had generally positive experiences receiving allied health care via telehealth during the COVID-19 pandemic, although some experienced difficulties using and communicating via the technology. Findings indicated no differences between satisfaction with telephone or video modalities, or between physiotherapy, speech pathology, occupational therapy, or psychology services.

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In 2020, the COVID-19 pandemic and introduction of social distancing restrictions had a profound effect on the delivery of health

care across the world. Many health care services rapidly pivoted to the delivery of care remotely via telecommunication technology, commonly known as telehealth, to facilitate continuity of care.¹ The vast majority of people in Western countries have access to the internet and a desktop or laptop computer (or tablet), with over 85% of Australian and United States households having internet access, and more than 91% owning a smartphone or desktop or laptop computer.^{2,3} As such, telehealth may offer an alternative mode of health care delivery that is accessible to many. Indeed, allied health clinicians reported that video and telephone calls were among the most common methods of delivering telehealth services during the pandemic.^{4,5}

Over the past decade, evidence to support the effectiveness of telehealth in allied health care has been growing, including in physiotherapy,^{6,7} speech pathology,⁸⁻¹⁰ psychology,^{11,12} and occupational therapy¹³ disciplines. There is also evidence to support the acceptability of telehealth within these professions.¹⁴⁻¹⁹ Because of their complex health needs, people with disabilities are among the highest users of allied health care.²⁰ There is some evidence that telehealth services are clinically equivalent to traditional in-person services among those with stroke,²¹ traumatic brain injury,²² neurodevelopmental disorders,²³ and autism.²⁴⁻²⁶ However, most of these existing studies have been conducted in the research setting, often as part of a clinical trial. As such, it is not clear whether the existing evidence reflects user experiences with telehealth in real-world settings.

Before the COVID-19 pandemic, implementation of telehealth services by allied health professions was limited, primarily because of the lack of patient willingness and limited third-party funding for such services.²⁷ The rapid pivot to telehealth during the pandemic has thus provided a unique opportunity to evaluate experiences with telehealth outside of the research setting. Many studies have done so in the general population,^{5,28-32} yet only 2 have done so in people with disabilities.^{33,34} Although these 2 studies examined experiences with telehealth across a range of allied health professions (including physiotherapists, occupational therapists, speech therapists, psychologists, physicians, and podiatrists), none compared experiences between different professions. As such, it is not clear whether there are some professions where health care is more suited to telehealth delivery than others within this population. In addition, to our knowledge, studies examining the use of telehealth for people with disabilities have focused exclusively on children and youths,^{33,34} and so it is not clear whether experiences among adults with disabilities may differ.

The limited research evaluating the experiences of people with disabilities using telehealth during the pandemic has focused exclusively on video calls,^{33,34} and no studies have examined experiences with services delivered via telephone. People with disabilities have unique and complex needs, and they may experience more difficulty communicating or accessing and/or using more complex technologies (eg, videoconferencing software) than the general population.^{35,36} There is also evidence that people with disabilities use internet services less often and are less likely to own computers, smart phones, or

tablets than those without disabilities.³⁵ Therefore, the delivery of care via simpler noninternet modalities (eg, telephone) might be more acceptable in this population, or conversely, the lack of visual contact may make it harder to receive optimal care. However, to our knowledge, no previous studies have directly compared experiences between telephone and video-delivered services in people with disabilities, and no previous studies have evaluated differences in experiences based on demographic variables (eg, age, geographic remoteness).

This study aimed to investigate and compare perceptions about the efficacy and acceptability of different allied health care services delivered via telephone and via video call for adults with disabilities during the COVID-19 pandemic.

Methods

Study design

We conducted a descriptive, cross-sectional online national survey.

Participants

Survey participants were recruited from June 2020, and the survey was closed in September 2020. To be eligible, participants had to have a permanent or significant disability and be funded by the National Disability Insurance Scheme (NDIS) in 2020 or be a family member, partner, or carer of a person with a disability who is funded by the NDIS. The NDIS is a government-funded scheme that supports more than 391,000 Australians with permanent and significant disabilities by providing access to support workers, assistive equipment and/or technology, and/or funding for disability-related allied health care services and supports.³⁷ Only data from adults (19 years or older, based on the age categories included in the survey) who had received care via telehealth from a physiotherapist, occupational therapist, psychologist, or speech pathologist from June to September 2020 were included in this article. Complete data from the survey have been published elsewhere.³⁸

The NDIS facilitated participant recruitment through advertisements on their website, social media, and newsletters, as well as through invitations sent to peak bodies and advocacy groups. Participants were also recruited via social media advertisements by the Centre for Health, Exercise and Sports Medicine. We aimed to recruit as many participants as possible during the recruitment period of 4 months, with a minimum recruitment target of 384 participants. There are approximately 400,000 NDIS participants in Australia, so this target (approximately 0.01% of 400,000) was deemed to be highly achievable. Because this is a descriptive study, formal power calculations were not required. However, precision-based sample size calculations showed a target sample size of 384 provides a precision of $\pm 5\%$ for the 2-sided 95% CI of the true underlying proportion of participants who report agreement with a particular statement when assuming a proportion of 50% (ie, 45%-55%) and using the Wald method to measure the 95% CI.³⁹

The study was approved by the University Human Research Ethics Committee. All participants provided informed consent by

List of abbreviations:

NDIS National Disability Insurance Scheme

ticking a box at the start of the survey confirming that they had read the plain language statement and were willing to participate.

Survey instrument

Participants completed a customized online survey in Qualtrics^a about their experiences accessing allied health care supports during the COVID-19 pandemic. Previous research on consumer and clinician attitudes toward telehealth^{40,41} informed the survey (appendix S1, available online only at <http://www.archives-pmr.org/>), which was developed by members of the research team, representatives of the NDIS, and a steering committee comprising experienced researchers in occupational therapy, physiotherapy, psychology, and speech pathology. The survey underwent pilot testing with 10 NDIS participants. The survey gathered demographic data (eg, age, sex, level of education) and information about the nature and severity of the NDIS participant's disability. The survey asked 6 questions, each rated on a 5-point Likert scale, about experiences with video- or telephone-delivered care: (1) ease of using the technology, (2) comfort communicating via the technology, (3) happiness with privacy and/or security, (4) safety, (5) effectiveness, and (6) likeliness to use telephone and/or video consultations in the future. If participants had received care from more than 1 profession, and thus provided multiple data points, data for only 1 profession were randomly chosen (using Microsoft Excel "RAND" function) for inclusion in this article. The same procedure was followed for those who received care via both telephone and video, in that only data relating to 1 modality was randomly chosen.

Data analysis

Geographic residential locations of participants were categorized by postcodes into metropolitan, regional and/or rural, and remote areas.⁴² Data analysis was performed with the SPSS Version 27.^b Descriptive statistics (frequencies and proportions) were calculated for responses to survey questions. Data relating to telehealth experiences (eg, ease of using technology, comfort communicating, etc) were grouped into negative (2 most negative response options, eg, "very difficult" and "difficult"), neutral (eg, "neither easy nor difficult"), and positive (eg, "easy" and "very easy") responses. Response distributions were described as n (%) with 95% CIs calculated around proportions.

To compare experiences across allied health professions, 4 × 3 chi-square tests were performed in SPSS for both the telephone and video modalities across the 6 survey questions. To compare experiences across telephone and video (pooled across all allied health professions), 2 × 3 chi-square tests were performed for each of the 6 survey questions for telephone and for video.

Subgroup analyses were also performed using 2 × 3 chi-square tests to investigate whether experiences differed by age, geographic remoteness, and level of assistance needed to communicate. Responses to 2 survey questions for telephone and video services (pooled across all allied health professions) were used:

- 1 How effective for your problem was the care you received from the [allied health care profession] via telephone/video over the internet?
- 2 If you needed to see an [allied health care profession] once the COVID-19 pandemic had ended, how likely would you be to choose to see them via telephone/video over the internet?

Responses to the 2 questions above were analyzed according to age (grouped into 19-34 years, 35-55 years, 55+ years), geographic remoteness (grouped into metropolitan, regional/remote/rural), and whether assistance is needed to communicate (grouped into yes or no). Because of the number of chi-square tests being performed, an α of 0.01 was used. For chi-square tests that were significant ($P < .01$), adjusted residuals were calculated to identify the cells of difference. Given the large range of disabilities included in our survey (17 different types), the very small numbers within each subgroup meant we were unable to complete subgroups analyses for type of disability.

Results

Characteristics of the participants

The survey was completed by 581 people, most (58%) of whom were the person with the disability, with the other 42% being carers or parents completing the survey on behalf of the person with the disability. Characteristics of participants are shown in table 1. More were female (65%) and lived in a metropolitan area of Australia (66%). The most common disability represented was autism (20%). Many participants required help from people or special equipment and/or assistive technology (or both) to move around (65%) and to communicate (52%). Around three-quarters (73%) had no previous experience with telehealth.

Overall experiences with telehealth

Table 2 and fig 1 and 2 show participant experiences with telehealth. Overall, across each allied health profession and across telephone and video, around three-quarters felt safe during the consultation (74%) and two-thirds were happy with the privacy and/or security of the consultation (61%-67%). Around half found the technology easy to use (47%-56%), were comfortable communicating via technology (51%-55%), and believed the care they received was effective (56%-64%). Around one-third (32%-36%) were likely to choose to see their allied health profession via telehealth after the pandemic.

A minority were unhappy with the privacy and/or security of the consultation (6%-9%) and felt unsafe during the consultation (5%-7%). Around one-fifth found it difficult to use the technology (17%-26%) and believed the care that they received was ineffective (17%). Around one-quarter (24%-27%) felt uncomfortable communicating via technology. Around half (48%-51%) were unlikely to choose to see their allied health profession via telehealth after the pandemic.

Differences between experiences with telephone and video and between allied health professions

Table 2 and figs 1 and 2 show participant experiences with telehealth delivered via telephone and video and across the 4 allied health professions. There were no differences in proportions of positive, neutral, and negative responses between telephone and video or between each of the allied health professions ($P > .01$ for all comparisons).

Table 1 Demographic characteristics of participants* by allied healthcare profession (N=581)

	All (N=581)	Occupational Therapy (n=194)	Physiotherapy (n=114)	Psychology (n=183)	Speech Pathology (n=90)
Who completed the survey, n (%)					
Person with disability	338 (58)	121 (62)	74 (65)	120 (66)	23 (26)
Carer/partner/family member	243 (42)	73 (38)	40 (35)	63 (34)	67 (74)
Sex, n (%)					
Male	194 (33)	68 (35)	34 (30)	51 (28)	41 (46)
Female	379 (65)	125 (64)	77 (68)	128 (70)	49 (54)
Other	6 (1)	1 (1)	3 (3)	2 (1)	0 (0)
Age, n (%)					
19-34 y	183 (31)	61 (31)	26 (22)	57 (31)	39 (43)
35-54 y	248 (43)	74 (38)	52 (46)	87 (48)	35 (39)
55+ y	149 (26)	59 (31)	36 (32)	38 (21)	16 (18)
Geographic remoteness, n (%)					
Metropolitan	369 (66)	111 (60)	79 (72)	123 (68)	56 (65)
Regional/rural	181 (32)	70 (38)	30 (28)	53 (29)	28 (33)
Remote	11 (2)	5 (2)	0 (0)	4 (3)	2 (2)
Language spoken at home, n (%)					
English	559 (96)	187 (96)	111 (97)	175 (96)	86 (96)
Other	16 (4)	5 (4)	2 (3)	5 (4)	4 (4)
Primary disability, n (%)					
Acquired brain injury	17 (3)	4 (2)	6 (6)	3 (2)	4 (5)
Autism	106 (20)	32 (18)	4 (4)	43 (27)	27 (33)
Cerebral palsy	38 (7)	15 (9)	16 (15)	6 (4)	1 (1)
Developmental delay	5 (1)	0 (0)	1 (1)	2 (1)	2 (3)
Down syndrome	24 (5)	4 (2)	2 (2)	4 (3)	14 (17)
Global developmental delay	4 (1)	2 (1)	1 (1)	0 (0)	1 (1)
Hearing impairment or deaf	9 (2)	2 (1)	0 (0)	4 (3)	3 (4)
Intellectual disability	43 (8)	13 (7)	7 (7)	8 (5)	0 (0)
Multiple sclerosis	48 (9)	17 (10)	23 (22)	8 (5)	15 (19)
Psychosocial disability	58 (11)	17 (10)	7 (7)	34 (21)	0 (0)
Spinal cord injury	19 (4)	13 (7)	6 (6)	0 (0)	0 (0)
Stroke	3 (1)	1 (1)	1 (1)	1 (1)	0 (0)
Visual impairment	8 (2)	4 (2)	0 (0)	4 (3)	0 (0)
Other neurologic	66 (13)	28 (16)	12 (11)	16 (10)	10 (12)
Other physical	53 (10)	15 (9)	17 (16)	19 (12)	2 (3)
Other sensory/speech	2 (<0)	0 (0)	1 (1)	0 (0)	1 (1)
Other	19 (4)	9 (5)	1 (1)	8 (5)	1 (1)
Needing assistance to move around, n (%)					
None	204 (35)	44 (23)	23 (20)	90 (49)	47 (52)
Special equipment or assistive technology	138 (23)	58 (30)	48 (42)	23 (13)	9 (10)
Help from other people	119 (21)	39 (20)	15 (13)	41 (24)	24 (27)
Both equipment and help from other people	119 (21)	53 (27)	28 (25)	28 (15)	10 (11)
Needing assistance to communicate, n (%)					
No	279 (48)	99 (51)	69 (61)	97 (53)	14 (16)
Special equipment or assistive technology	41 (7)	15 (8)	6 (5)	13 (7)	7 (8)
Help from other people	194 (34)	55 (28)	30 (26)	61 (34)	48 (53)
Both equipment and help from other people	66 (11)	25 (13)	9 (8)	11 (6)	21 (23)
Employment status, n (%)					
Work full-time	47 (8)	14 (7)	8 (7)	19 (10)	6 (7)
Work casual or part-time	98 (17)	33 (17)	25 (22)	24 (13)	16 (18)
Retired (not because of health reasons)	23 (4)	9 (5)	9 (8)	2 (1)	3 (3)
Not working	411 (71)	137 (71)	72 (63)	137 (75)	65 (72)
Experience with telehealth before COVID-19, n (%)					
No	419 (73)	133 (69)	89 (78)	125 (69)	72 (80)
Yes, via telephone	88 (15)	40 (21)	18 (16)	24 (13)	6 (7)
Yes, via video	44 (8)	13 (7)	2 (2)	20 (11)	9 (10)
Yes, via both video and telephone	27 (5)	7 (4)	5 (4)	12 (7)	3 (3)

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Table 1 (Continued)

	All (N=581)	Occupational Therapy (n=194)	Physiotherapy (n=114)	Psychology (n=183)	Speech Pathology (n=90)
Modality used during telehealth encounter					
Telephone	241 (42)	107 (55)	50 (44)	65 (36)	19 (21)
Video	340 (59)	78 (45)	64 (56)	118 (65)	71 (79)

NOTE. Individual items may not add to totals because of missing data.

* Demographic data relate to the person with the disability, not carers/partners/family members completing the survey on their behalf.

Differences between experiences in subgroups of participants

Table 3 shows experiences with telehealth across subgroups of participants (by remoteness, age, and whether assistance is needed to communicate). Results of chi-square tests indicated that those who did not need help communicating were more likely to be neutral about seeing their allied health profession via telephone after the pandemic compared with those who did need help communicating (23% vs 9%, respectively; $P=.009$). There was no evidence of other differences in response proportions between subgroups ($P>.01$ for all).

Discussion

This study aimed to investigate and compare experiences with different allied health care services delivered via telephone and via video for adults with disabilities during the COVID-19 pandemic. We found that most reported positive experiences using telehealth, although some experienced challenges using and communicating via the technology. There were no differences between experiences with telephone or video modalities or across the different allied health professions evaluated.

To our knowledge, this is the first study in people with disabilities to compare experiences with telehealth via telephone and video. Our findings are broadly comparable with others that have focused solely on experiences with video. For example, previous studies have found that video-delivered services (including psychology, occupational therapy, speech pathology, and physiotherapy) were perceived by users to be effective and they felt comfortable communicating,^{33,43-48} although some technical difficulties were experienced, and users believed that telehealth should not replace in-person care.^{44,46} Our findings can also be compared with other studies investigating the experiences of people without disabilities who have accessed allied health care via telephone and video. In physiotherapy, a survey investigating perceptions toward telephone- and video-delivered care among people with osteoarthritis found that respondents favored video, particularly in terms of its perceived effectiveness, usefulness, and acceptability.⁴¹ In contrast, however, a more recent study investigating the experiences of the general population (ie, not specifically targeting those with disabilities) who consulted with occupational therapists and speech pathologists via telehealth during the COVID-19 pandemic found no differences in experiences with telephone- and video-delivered services.³¹ There is some evidence from general practice medicine that telephone and video consultations are similar in terms of consultation length, content, and quality⁴⁹ and that there is little difference between the 2 modalities in terms of patient

outcomes or satisfaction.⁵⁰ Collectively, these findings suggest that the telephone is an equally satisfactory telehealth modality as video but likely depends on the individual preferences and requirements of each patient, as well as the availability of technology. However, despite the positive experiences that were reported, many still indicated an unwillingness to use telephone and video services in the future. From our survey alone, the reason for this is unclear. Further qualitative research is needed to better understand why adults with disabilities may be unwilling to use telehealth services in the future, despite positive experiences.

To our knowledge, this is the first study to compare experiences with telehealth across different allied health professions in adults with disabilities. A recent study investigating experiences with telehealth (not specifically targeting those with disabilities) compared experiences across different allied health professions (including occupational therapy and speech pathology), finding that experiences largely did not differ between professions.³¹ Another recent COVID-19 survey of experiences of patients who consulted via telehealth with exercise physiologists, physiotherapists, psychologists, or speech pathologists found that there were no differences in experiences and satisfaction across professions.⁵¹ Further research into the acceptability and efficacy of telehealth for adults with disabilities across different allied health care professions is needed to determine the suitability of such services in the longer-term, and also to investigate experiences and perceptions from the perspective of the clinicians delivering the service.⁵

It is somewhat surprising that we found telephone and video services to be equally acceptable to patients receiving care from traditionally hands-on allied health care professions such as physiotherapy, speech pathology, and occupational therapy. It might be assumed that video modalities may be more appropriate for these professions, given that care often involves prescription of an exercise program or observation of the body and/or mouth, although this is not what our findings indicated. In fact, around half of surveyed participants used telephone modalities for occupational therapy (55%) and physiotherapy (44%), although only one-fifth did so for speech pathology (21%). Given we did not collect data on the type of care that participants received via telehealth, it is not clear whether care was modified depending on the modality (eg, whether exercise was only prescribed via video and not telephone). A recent study examining telehealth use by allied health care clinicians (predominantly physiotherapists, but also a small number of occupational therapists) for the general population during the pandemic found that the frequency of use of exercise, education, and physical activity did not differ from what is normally provided during in-person consultations.⁴ However, because data were pooled, it is unclear whether there were differences between telephone and video modalities. Other research has found that exercise can be effectively provided by physiotherapists

Table 2 Experiences with allied health care consultations via telephone and video call during the pandemic, n (%), 95% CI

	All (N=581)		Occupational Therapy (n=194)		Physiotherapy (n=114)		Psychology (n=183)		Speech pathology (n=90)	
	Telephone (n=241)	Video (n=340)	Telephone (n=107)	Video (n=87)	Telephone (n=50)	Video (n=64)	Telephone (n=65)	Video (n=118)	Telephone (n=19)	Video (n=71)
How easy was it to use the technology required for a consultation										
Easy	128 (56, 50-63)	158 (47, 42-53)	55 (54, 43-64)	37 (45, 34-56)	28 (57, 43-69)	35 (56, 43-68)	38 (61, 50-74)	58 (50, 39-59)	7 (50, 22-79)	28 (39, 25-48)
Neutral	60 (26, 21-32)	88 (26, 22-31)	30 (29, 21-38)	20 (24, 15-34)	15 (31, 18-43)	19 (30, 19-43)	13 (21, 11-32)	32 (27, 20-35)	2 (14, 0-36)	17 (24, 14-34)
Difficult	39 (17, 12-22)	87 (26, 22-31)	17 (17, 10-25)	25 (31, 21-42)	6 (12, 4-22)	9 (14, 6-24)	11 (18, 8-27)	27 (23, 15-31)	5 (36, 14-64)	26 (37, 25-48)
	χ^2 for differences between modalities: 6.913, <i>P</i> =.032		χ^2 for differences between professions: Telephone: 6.150, <i>P</i> =.407; Video: 10.089, <i>P</i> =.121							
How comfortable did you feel communicating										
Comfortable	116 (51, 44-58)	182 (55, 50-60)	55 (54, 45-64)	39 (48, 37-59)	22 (45, 31-59)	40 (64, 51-75)	32 (52, 40-63)	71 (61, 52-69)	7 (50, 21-79)	32 (45, 34-56)
Neutral	56 (25, 19-31)	61 (18, 14-22)	27 (27, 19-34)	17 (21, 12-31)	19 (39, 25-53)	14 (22, 13-33)	8 (13, 5-23)	16 (14, 7-21)	2 (14, 0-336)	14 (20, 10-30)
Uncomfortable	55 (24, 19-30)	90 (27, 23-32)	20 (20, 13-28)	26 (32, 22-43)	8 (16, 8-27)	9 (14, 6-24)	22 (36, 24-47)	30 (26, 19-33)	5 (36, 14-64)	25 (35, 24-45)
	χ^2 for differences between modalities: 3.335, <i>P</i> =.189		χ^2 for differences between professions: Telephone: 14.878, <i>P</i> =.021; Video: 12.156, <i>P</i> =.059							
How happy were you with the privacy/security during the consultation										
Happy	139 (61, 54-67)	222 (67, 61-72)	60 (59, 49-68)	52 (63, 52-73)	33 (67, 53-80)	50 (79, 70-89)	35 (57, 44-69)	76 (65, 56, 74)	11 (73, 53-93)	44 (62, 51-73)
Neutral	75 (33, 27-39)	80 (24, 20-29)	37 (36, 28-46)	24 (29, 21-40)	15 (31, 18-43)	10 (16, 8-25)	20 (32, 21-44)	22 (19, 12-27)	3 (20, 0-40)	24 (34, 23-45)
Unhappy	14 (6, 3-10)	31 (9, 6-13)	5 (5, 1-9)	6 (7, 2-13)	1 (2, 0-6)	3 (5, 3-11)	7 (11, 5-19)	19 (16, 9-23)	1 (7, 0-20)	3 (4, 0-10)
	χ^2 for differences between modalities: 6.233, <i>P</i> =.044		χ^2 for differences between professions: Telephone: 6.466, <i>P</i> =.373; Video: 7.908, <i>P</i> =.245							
How safe did you feel during the consultation										
Safe	168 (74, 68-80)	247 (74, 69-79)	72 (71, 62-79)	55 (67, 57-77)	37 (76, 63-86)	53 (84, 75-92)	48 (77, 66-87)	85 (73, 65-80)	11 (73, 53-93)	54 (76, 66-86)
Neutral	48 (21, 16-26)	63 (19, 15-23)	25 (25, 17-33)	22 (27, 17-37)	8 (16, 6-27)	8 (13, 5-21)	11 (18, 10-27)	20 (17, 11-24)	4 (27, 7-47)	13 (18, 10-27)
Unsafe	12 (5, 2-8)	23 (7, 5-10)	5 (5, 1-9)	5 (6, 1-12)	4 (8, 2-16)	2 (3, 0-8)	3 (5, 0-11)	12 (10, 5-16)	0 (0)	4 (6, 1-11)
	χ^2 for differences between modalities: 0.902, <i>P</i> =.637		χ^2 for differences between professions: Telephone: 3.538, <i>P</i> =.738; Video: 9.105, <i>P</i> =.168							
How effective for your problem was the care you received										
Effective	127 (56, 50-63)	213 (64, 69-69)	53 (52, 41-62)	50 (61, 51-71)	23 (48, 33-63)	40 (64, 51-75)	44 (71, 60-81)	84 (72, 63-80)	7 (50, 29-79)	39 (56, 44-69)
Neutral	61 (27, 21-33)	63 (19, 15-23)	30 (29, 21-38)	19 (23, 15-33)	16 (33, 21-48)	11 (18, 8-27)	12 (19, 10-29)	20 (17, 10-24)	3 (21, 0-43)	18 (26, 14-36)
Ineffective	38 (17, 12-22)	56 (17, 13-21)	19 (19, 12-28)	13 (16, 9-24)	9 (19, 8-31)	12 (19, 5-29)	6 (10, 3-18)	13 (11, 6-17)	4 (29, 7-57)	13 (19, 10-29)
	χ^2 for differences between modalities: 5.287, <i>P</i> =.071		χ^2 for differences between professions: 9.186, <i>P</i> =.163; Video: 8.810, <i>P</i> =.185							
If you needed to see the clinician once the COVID-19 pandemic has ended, how likely would you be to choose to see them via telephone/video										
Likely	72 (32, 26-39)	120 (36, 30-41)	34 (33, 24-43)	28 (34, 24-45)	11 (23, 10-35)	19 (30, 19-43)	24 (39, 27-52)	54 (46, 37-56)	3 (21, 7-43)	19 (27, 17-38)
Neutral	38 (17, 12-22)	52 (16, 12-20)	22 (22, 14-30)	12 (15, 7-22)	7 (15, 6-25)	15 (24, 14-35)	8 (13, 5-23)	15 (13, 7-19)	1 (7, 0-21)	10 (14, 6-23)
Unlikely	116 (51, 45-58)	161 (48, 43-54)	46 (45, 35-55)	42 (51, 40-62)	30 (63, 48-75)	29 (46, 33-59)	30 (48, 36-61)	48 (41, 33-50)	10 (71, 43-93)	42 (59, 48-72)
	χ^2 for differences between modalities: 1.045, <i>P</i> =.593		χ^2 for differences between professions: Telephone: 8.667, <i>P</i> =.193; Video: 12.378, <i>P</i> =.054							

NOTE. Individual items may not add to totals due to missing data.

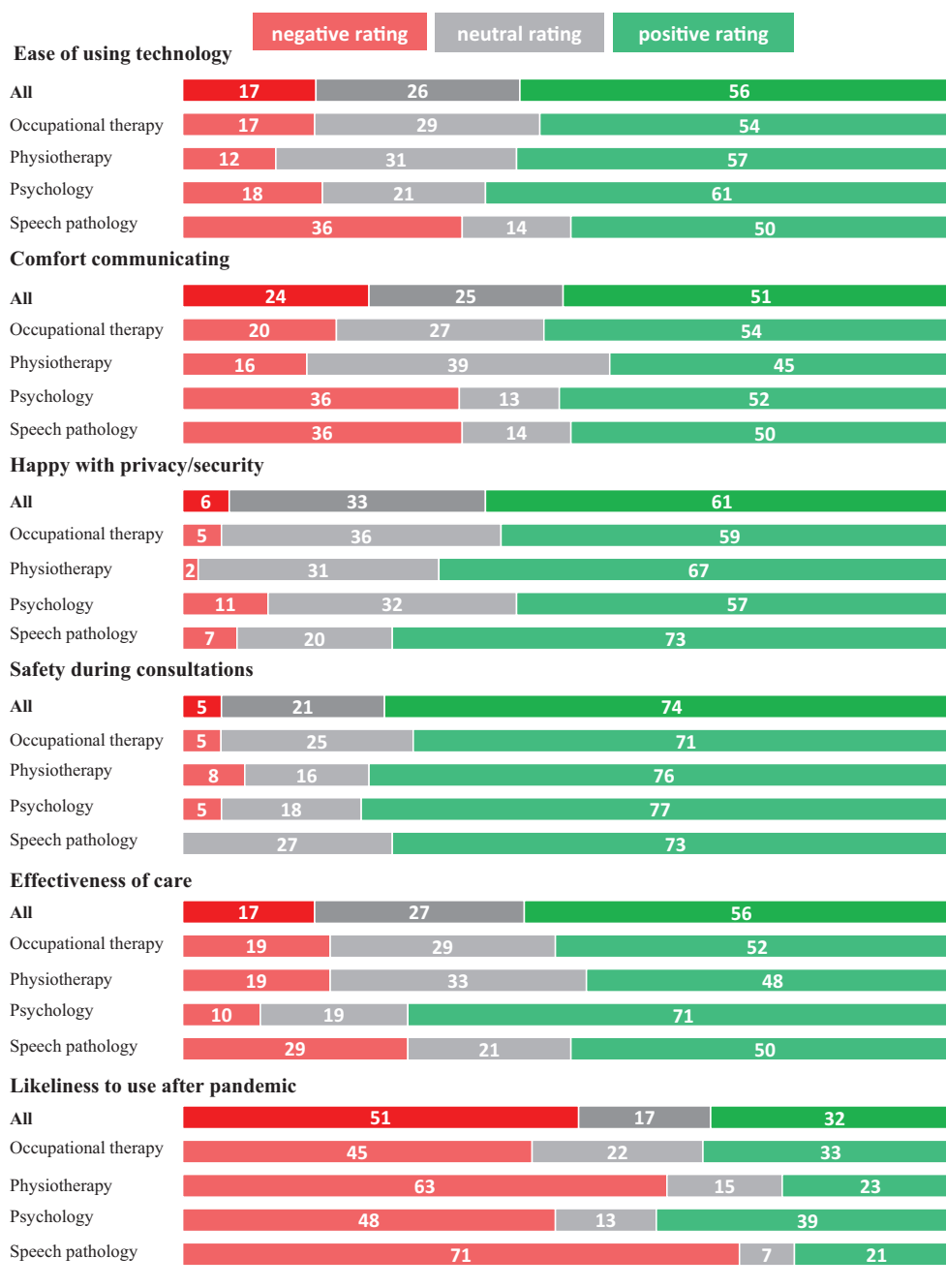


Fig 1 Proportion (%) of respondents with positive, negative, and neutral experiences with consultations via telephone.

via telephone for people with osteoarthritis⁵² and is also perceived to be acceptable by the patients and clinicians involved.^{17,18} Similarly, a scoping review of telehealth-delivered occupational therapy found that the modality used (telephone vs video) did not directly affect clinical outcomes of care,⁵³ although to our knowledge, no previous research has specifically evaluated telephone-delivered care in speech pathology.

Although participants in our study had generally positive experiences with telehealth overall, comparison with studies involving the general population suggest that those with permanent and significant disabilities experience unique barriers to such models of service delivery. Our related survey in 388 people (not specifically targeting those with disabilities) who consulted with allied health

care professions via telehealth during the COVID-19 pandemic³¹ used a very similar survey design to this study. Comparison between findings of the 2 studies indicates that those with permanent and significant disabilities appear to be less satisfied with telehealth than those in the general population. For example, less than 9% of participants within the general population study found the technology difficult to use, felt uncomfortable communicating, or believed that they care they received was ineffective. This contrasts with this study in people with disabilities, where 19%-27% of participants found the technology difficult to use, felt uncomfortable communicating, or believed the care they received was ineffective. One barrier to health care that already exists among people with disabilities is difficulties communicating,^{54,55} which

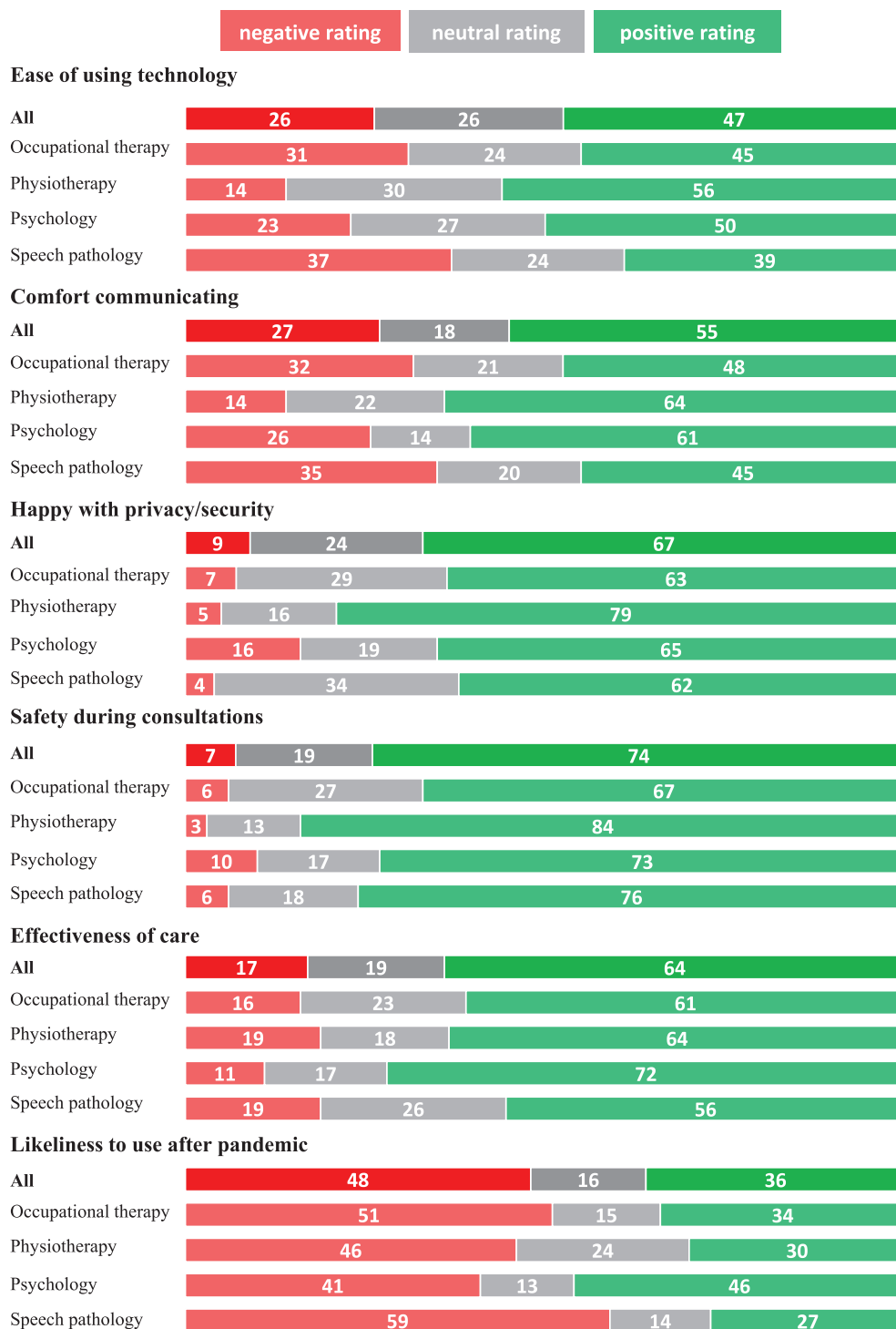


Fig 2 Proportion (%) of respondents with positive, negative, and neutral experiences with consultations via video.

may become even more apparent when consulting with a clinician via technology. Some people with disabilities (eg, vision, sensory/speech, neurologic impairments) may also experience difficulties operating the hardware or user interface or of telehealth software,³⁶ with issues relating to screen readers, sign language, captions, magnification, color, and contrast of displays. Many technical and accessibility issues with telehealth may improve with time as these technologies become better established;

however, the development of specialized interfaces may be required to ensure people with disabilities can easily and effectively use telehealth technologies.

Our findings suggest that a range of adults with disabilities, including those of various ages and those living in metropolitan and regional areas, have positive experiences using telehealth to access their allied health professional. This reflects findings of a previous study investigating moderators of treatment outcomes

Table 3 Subgroup analysis for experiences with telephone and video delivered care across all allied health professions, n (%)

	Telephone			Video		
	Negative	Neutral	Positive	Negative	Neutral	Positive
How effective for your problem was the care you received						
Remoteness						
Metropolitan	23 (17)	39 (29)	72 (54)	31 (14)	40 (18)	149 (68)
Regional/rural	12 (15)	18 (22)	51 (63)	21 (20)	22 (21)	61 (59)
	$\chi^2: 1.825, P=.401$			$\chi^2: 2.861, P=.239$		
Age						
19-34 y	8 (14)	14 (24)	36 (62)	20 (17)	26 (22)	71 (61)
35-54 y	21 (22)	20 (21)	54 (57)	24 (17)	23 (16)	97 (67)
55+ y	9 (12)	27 (37)	37 (51)	12 (17)	12 (20)	45 (63)
	$\chi^2: 7.646, P=.105$			$\chi^2: 1.819, P=.469$		
Need help to communicate						
No	21 (16)	34 (27)	73 (57)	20 (14)	19 (14)	102 (72)
Yes	17 (17)	27 (28)	54 (55)	36 (19)	44 (23)	111 (58)
	$\chi^2: 0.086, P=.958$			$\chi^2: 7.513, P=.023$		
If you needed to see the clinician once the COVID-19 pandemic has ended, how likely would you be to choose to see them via telephone/video						
Remoteness						
Metropolitan	68 (51)	23 (17)	43 (32)	109 (49)	31 (14)	81 (37)
Regional/rural	40 (49)	13 (16)	28 (35)	47 (45)	19 (18)	38 (37)
	$\chi^2: 0.150, P=.928$			$\chi^2: 1.079, P=.583$		
Age						
19-34 y	31 (53)	11 (19)	16 (28)	58 (50)	22 (19)	37 (32)
35-54 y	46 (48)	13 (14)	36 (38)	67 (46)	21 (15)	57 (39)
55+ y	39 (53)	14 (19)	20 (27)	36 (51)	9 (13)	26 (37)
	$\chi^2: 3.100, P=.541$			$\chi^2: 2.599, P=.627$		
Need help to communicate						
No	66 (52)	29 (23)	33 (26)	63 (45)	19 (14)	59 (42)
Yes	50 (51)	9 (9)	39 (40)	98 (51)	33 (17)	61 (32)
	$\chi^2: 9.417, P=.009$			$\chi^2: 3.687, P=.158$		

NOTE. Individual items may not add to totals because of missing data.

after a telehealth self-management and education intervention from psychologists and social workers in people with multiple sclerosis, which found that demographic variables (including age, sex, and education) were not associated with perceived treatment effectiveness, concluding that the telehealth program was suitable for a broad range of people.⁵⁶ Given that almost half (42%) of our cohort were parents or carers of someone with a disability, it is possible that their experiences with telehealth differed from those who they were caring for with the disability. It is also unclear whether carers were assisting the person with the disability to complete the survey or whether they were responding based on their own perceptions about operating or facilitating telehealth consultations for the person with the disability. Future research should examine whether parents or carers have different experiences with telehealth than the actual patient with the disability and also evaluate whether there are differences in experiences between different types of disability (eg, physical disability vs psychosocial disability).

Our findings have implications for the future design and delivery of telehealth services for adults with disabilities. Findings suggested that participants had similar experiences using the telephone and video for their allied health care, suggesting that both modes of service delivery may be suitable for and acceptable to people with disabilities, depending on

their individual needs and preferences. Our findings suggest that around one-third of adults with disabilities would be interested in using such services beyond the pandemic. Given that telehealth delivery is likely to become increasingly common beyond the pandemic, uptake of telehealth services will likely further increase as services become more mainstream. Although our findings suggest that telehealth services are broadly acceptable to most, further consideration regarding ease of use and communication issues is needed. In addition, our findings suggest that telehealth services are acceptable to people in metropolitan as well as regional and/or remote areas, which is an important finding because it is often thought that telehealth is of most relevance to those who reside outside of metropolitan areas.

Study limitations

Only those who were supported by the NDIS and were living in Australia were eligible to participate, so our findings may not be generalizable to those who are not part of the NDIS, those residing in other countries with other disability support schemes in place, or people with mild disability. In addition, given our wide inclusion criteria (any NDIS participant who had received at least 1 allied health care consultation via telehealth during the pandemic),

the individual circumstances of each participant and the purpose of their telehealth consultation(s) likely varied, so our findings may not necessarily be generalizable to specific situations or scenarios. The fact that our survey was only available online means that our findings may be biased toward those who are already comfortable using technology, and therefore the perceptions of those with lower digital literacy may differ to those of our cohort. Our analysis involved a large number of chi-square tests, increasing the chance for type I error, although no significant differences were detected. Finally, the majority (77%) of our cohort had not used telehealth with an allied health care clinician before the pandemic, and their views may change with greater experience or better organized services.

Conclusions

In conclusion, adults with disabilities in Australia had generally positive experiences receiving allied health care via telehealth during the COVID-19 pandemic, although some experienced difficulties using and communicating via the technology. Findings indicated that there were no differences in satisfaction between telephone and video modalities, or between physiotherapy, speech pathology, occupational therapy, or psychology services.

Suppliers

- a Qualtrics; Qualtrics.
- b SPSS Version 27; IBM.

Keywords

COVID-19; Occupational therapy; Physical therapy modalities; Psychology; Rehabilitation; Speech-language pathology; Telephone; Telemedicine

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