Future Healthcare Journal 12 (2025) 100209

Contents lists available at ScienceDirect

Future Healthcare Journal

journal homepage: https://www.sciencedirect.com/journal/future-healthcare-journal

Research Paper

A service evaluation of patient and clinician experience of video consultations in a specialist outpatient neurorehabilitation service

A. Saif[a,*], Charlotte Winward[a,b], Isabelle Di Pierro[a], Katie Butler[a], Judy Cornish[a], Helen Dawes[c], Johnny Collett[b]

[a] Oxford Centre for Enablement, Nuffield Orthopaedic Centre, Windmill Rd, Headington, Oxford OX3 7HE
[b] Centre for Movement, Occupational and Rehabilitation Sciences (MOReS), Department of Sport, Health Sciences and Social Work Oxford Brookes University, Headington Rd, Headington, Oxford OX3 0BP
[c] Medical School Building, Exeter University St Luke's Campus, Magdalen Road, Exeter, EX1 2LU, UK

ARTICLE INFO

Keywords:
Video consultation
Neurological outpatients
Fatigue management
Telerehabilitation
Attend anywhere

ABSTRACT

Introduction: There has been a rapid adoption of telerehabilitation services, particularly during the COVID-19 pandemic, with minimal guidance or evaluation of benefit. This survey explores experiences of video consultations in a specialist outpatient neurorehabilitation service.

Methods: Digital surveys were designed to evaluate experience of Attend Anywhere. Anyone could answer the survey after attending a video consultation.

Setting and participants: Patients and doctors, occupational therapists, physiotherapists and speech and language therapists from a specialist outpatient neurorehabilitation service, between January and November 2020.

Results: A total of 637 surveys were analysed. 74.6% of clinicians and 46.4% of patients indicated that video consultations were effective (X^2=158.6, $p < 0.001$). Physiotherapists indicated that video consultation was not as effective as face to face (30.6%, X^2=12.5, $p = 0.052$). Over 95% of clinicians and patients reported that they would use the video consultation system again X^2=5.8, $p < 0.016$.

Conclusions: Video consultation offers potential for improving access to healthcare for patients with complex neurological conditions.

Introduction

Telerehabilitation is defined as the remote assessment or delivery of therapy using telephone or video consultation (VC) technology[1] and creating a rehabilitation environment beyond the traditional hospital or clinic setting.[2] Telerehabilitation and the use of VC is considered a viable treatment option, with a rapidly developing worldwide infrastructure.[3-6]

In response to the SARS-COV-2 virus pandemic, international health services across the world were mandated to postpone in-person appointments and 'roll out remote consultations using video, telephone… as soon as possible'.[7-9] Globally there was a rapid expansion of digital solutions and guidelines to support telerehabilitation in medical and therapy clinics.[7,10-12] As a result, services had to adapt swiftly and embrace significant transformations in healthcare delivery.

Recent technology advances have transformed telerehabilitation into a feasible alternative to in-person therapy, with positive patient experience reported in neurological conditions[13-18] leading to improvements in general fitness, walking, balance, and arm and hand function.[2] Cited advantages of telerehabilitation include better adherence to prescribed home exercise programmes, motivation to participate in therapy and improved mental health.[19] Carers report positive insights,[20] with benefits of reduced travel time and costs associated with attending in-person appointments.[16] Nonetheless, the acceptance and benefit of virtual consultations for neurorehabilitation patients who require complex multidisciplinary care remain underexplored.[18]

Therefore, to capture the patient and clinician experience, a service evaluation using survey questions was undertaken. The survey focused on experience of VC technology, the perceived effectiveness of VC compared with face-to-face appointments and the advantages and disadvantages of VC.

Here we report patient and clinician experience from a service evaluation undertaken in an NHS complex neurological outpatient service.

This article reflects the opinions of the author(s) and should not be taken to represent the policy of the Royal College of Physicians unless specifically stated.

* Corresponding author.
E-mail address: Ahmad.Saif@ouh.nhs.uk (A. Saif).

https://doi.org/10.1016/j.fhj.2024.100209
Received 23 May 2024; Received in revised form 18 October 2024; Accepted 28 October 2024

Methods

Study design: A service evaluation using a quantitative cross-sectional design survey was designed to capture patient and clinician experiences of VC in a specialist outpatient neurorehabilitation service. Reporting was guided by the Checklist for Reporting Results of Internet E-surveys.[21]

This was a service evaluation/ quality improvement project. Completion of the survey by staff and patients was optional and anonymous. The surveys were registered via the local trust governance system (Ulysses) with audit no. 6544 and 6597.

A patient and clinician survey were designed and evaluated in a pilot survey.[22] Two further surveys for occupational therapy clinicians and one for patients attending occupational therapy sessions were added. In total four surveys were designed in Microsoft Forms. Question types included Likert scale, multiple choice options and free text comments. Questions centred on experience of VC, the advantages and disadvantages of VC, and the perceived effectiveness of VC.

Our hospital chose Attend Anywhere (AA) as the preferred VC platform. AA is a web-based system connecting patients and clinicians to a digitally secure virtual clinic room. Only the clinician booked to this appointment can admit a patient to the AA clinic. AA has built-in video and chat features with a screen-sharing option.

All Microsoft Forms surveys and results were securely stored on the trust organisation cloud-based platform, no patient identifiable data were recorded.

Study setting: NHS specialist level 1 neurological outpatient services, in Oxfordshire, UK providing rehabilitation for people over the age of 16 with life-changing neurological disorders using the Attend Anywhere VC platform.

Participants: Patients referred to the specialist neurological outpatient service for neurorehabilitation appointments in medicine, speech and language therapy, physiotherapy or occupational therapy were offered the option to complete the survey. Treating clinicians were also offered the option to complete the survey.

Study Objectives: To survey patients and clinicians on their experience of VC in a specialist outpatient neurorehabilitation service.

Data collection: Survey data were collected January–November 2020. Surveys were attached to the Attend Anywhere system by the hospital digital transformation team. The survey was administered solely on the AA platform; there was no alternative access to the survey. Patients and/or clinicians could choose to complete the survey or close the survey without submitting a response, ensuring voluntary participation. Only some authors had access to the survey data during the data collection period. Response to the survey was acknowledgement of consent, all survey data were collected anonymously.

Bias: Both groups could only answer the survey when the VC had been completed; however, it is possible that patients and clinicians could have answered the survey more than once because of attending more than one appointment. We did not survey patients who chose to wait for in-person treatment, thus there is a risk of selection bias towards those more accepting of VC or technical-minded or motivated to take up VC.

Study size: Study size was defined by the data collection period between January–November 2020. There was no limit to the number of responses collected.

Analysis: We analysed responses to three survey questions and report the findings of these questions for all groups.

Q1: Was the video consultation as effective as a face-to-face consultation? 'more' effective, as effective (the 'same') or 'less' effective
Q2: Would you use video consultation again? Yes/No and
Q3: Did you experience any difficulties Yes/No

The Cross tabs procedure in SPSS v29 was used to compare proportion of response and response between clinicians and patients in the subgroups:

A) patients and clinicians
B) clinicians – four distinct clinical groups doctor (Dr), occupational therapist (OT), physiotherapist (PT) and speech and language therapist (SLT)
C) patients attending a VC with a specific clinician.

Data are reported as proportion of response (%), with chi-square statistic and probability value, alpha was 0.05.

The survey gave participants the opportunity to make comments. These comments are used to illustrate survey questions, but were not thematically analysed. The length of time for each VC was recorded through the AA software. Any VC greater than 10 minutes and with a survey response is reported in the analysis. The 10-minute AA cut-off time was chosen as a meaningful time for an appointment to have taken place.

Results

A total of 927 surveys were received. Responses were removed if the clinician type was unspecified ($n = 290$). 637 responses were analysed, 414 clinician and 223 patients. Due to the survey design, data for age and gender were only available for OT and PT consultations. $n = 46$ female and $n = 64$ male ($n = 110$, two missing data) and $n = 18$ (16.1%) were under 45 years old, $n = 50$ (44.7%) aged between 45 and 64 and $n = 42$ (37.5%) were over 65 years old.

For the duration of the survey, 877 VC lasted longer than 10 mins. In total there were 167 Dr, 490 PT and 220 OT VC recorded. We were unable to identify data for the SLT/VC time due to the Attend Anywhere code employed in the initial set-up of each clinic. A total of 493.27 h (mean 82.21, sd 30.45) AA was delivered. The average VC time with a doctor was 29 mins 30 s (sd 1 min 48 secs), it was 31 mins 36 s (sd 1 min 48 s) with a PT and 41 mins and 42 s (sd 3 mins) with an OT.

Analysis of responses according to groups can be found in Table 1.

Q1 Was the video consultation as effective as a face-to-face consultation?
More clinicians (74.6%) than patients (46.4%) indicated that VC was more effective ($X^2=158.6$, $p < 0.001$). Nevertheless 85.5% of patients reported VC to be at least as effective as face to face.

A) There was no difference between Dr, OT and SLT (81.7%, 77.7%, 78.9%) on how effective they indicated VC to be. However, a greater proportion of PT indicated that VC was not as effective as face to face (30.6%, $X^2=12.5$, $p = 0.052$).

OTs specifically commented that VC was effective for fatigue management and initial consultations. They also commented that it was difficult to share and send written/printed information and resources to patients within the AA platform.

For patients attending an OT-specific VC or PT-specific VC, patients reported that an OT VC was more effective than face-to-face appointments and PT/VC were the same or less effective than face-to-face appointments ($X^2=15.2$, $p < 0.001$).

Patients commented that VC was 'informative', 'very convenient', and 'helps me focus on things to do instead of worrying'. 'A balance of face to face and video calls would be the most effective', 'but face to face is best'.

Q2, Would you use video consultation again?

A) 98.5% of all clinicians and 95% of patients reported that they would use the VC system again ($X^2=5.8$, $p < 0.016$).
B) Patients attending VC with a Dr or PT would use the system again ($X^2=0.4$, $p = 0.523$).

Q3 Did you experience any difficulties?

A) Approximately half the patients (42.6%) and clinicians (42.3%) experienced difficulties with the VC system. Clinicians reported a range of technical difficulties. Common problems included an unstable internet connection, activated alarms interrupting appointments and difficulty locating a private/confidential clinic space.

Table 1
Analysis of responses for patients and clinicians.

		Clinicians	Patients	CHI Square	Dr	OT	PT	SLT	CHI square	DR patient	OT patient	PT patient	CHI square
Q1. WAS THE VIDEO CONSULTATION AS EFFECTIVE AS A FACE-TO-FACE CONSULTATION?				X^2=158.6, $p < 0.001$					X^2=12.5, $p = 0.052$				X^2=15.2, $p < 0.001$
	No	99[a] (24.9)	16[b] (14.5)		11[a] (18.3)	19[a] (20.2)	57[a] (30.6)	12[a] (24.9)		NA	1[a] (2.2)	15[b] (23.4)	
N (%)	The same	2[a] (0.5)	43[b] (39.1)		0[a,b] (0.0)	2[b] (2.1)	0[a] (0.0)	0[a,b] (0.0)		NA	15[a] (32.6)	28[a] (43.8)	
	Yes	269[a] (74.6)	51[b] (46.4)		49[a] (81.7)	73[a] (77.7)	129[a] (69.4)	45[a] (78.9)		NA	30[a] (65.2)	21[b] (32.8)	
Q2. WOULD YOU USE THIS VIDEO CONSULTATION SYSTEM AGAIN?													
N (%)	No	6[a] (1.5)	8[b] (5.0)	X^2=5.8 $p = 0.016$	0[a] (0.0)	1[a] (1.1)	5[a] (2.6)	0[a] (0.0)	X^2=3.615, $p = 0.306$	2[a] (3.2)	NA	5[a] (5.3)	X^2=0.4, $p = 0.523$
	Yes	398[a] (98.5)	152[b] (95.0)		61[a](100.0)	90[a] (98.9)	186[a] (97.4)	62[a] (100.0)		61[a] (96.8)	NA	89[a] (94.7)	
Q3. DID YOU EXPERIENCE ANY DIFFICULTIES?													
N (%)	No	239[a] (57.7)	128[a] (57.4)	X^2 = 0.0 $p = 0.936$	31[a] (50.8)	69[b] (69.0)	104[a] (54.5)	35[a,b] (56.5)	X^2 = 7.3, $p = 0.063$	33[a] (45.2)	34[b] (68.0)	61[b] (61.0)	X^2=7.3, $p = 0.026$
	yes	175[a] (42.3)	95[a] (42.6)		30[a] (49.2)	31[b] (31.0)	87[a] (45.5)	27 [a,b] (43.5)		40[a] (54.8)	16[b] (32.0)	39[b] (39.0)	

Data are reported as the number of responses (percentage %) compared using a chi-squared test, reported with the X^2 statistic and probability value (p), homologous subsets are indicated by a,b. Dr, medical doctor, OT, occupational therapist, PT, physiotherapist, SLT, speech and language therapist.

B) Dr, SLT and PT had similar reported difficulties. However, OT reported fewer difficulties (31%; X^2=7.3, p = 0.063).
C) Patients who attended PT or OT VC reported fewer difficulties (X^2=7.3, p = 0.026) than those attending a doctor VC.

Clinicians commented that VC was 'equal if not better than face to face, particularly where the risk of bringing the patient to clinic was high or the patient could be set up with a programme and monitored virtually'. Clinicians wrote clear statements on circumstances in which VC was not appropriate to use, such as 'unable to trial equipment' or 'can't assess range of movement for hand contractures'.

Discussion

Both patients and clinicians indicated that they would use VC for neurorehabilitation appointments. Survey comments from all groups indicated a preference to use VC for conversation-based interactions, such as initial history taking, education or information sharing, and for fatigue management for people with ultiple sclerosis (pwMS). Several studies have reported the benefits of self-guided online interventions to reduce fatigue symptoms in MS.[23-25] As a result of this service evaluation, our fatigue management programme has sustained using VC and achieved comparable clinical results to in-person sessions, while using fewer resources and imposing less burden on patients. VCs now account for 30% of all OT activity, with 20% for fatigue management.

Reported constraints in telerehabilitation studies[26, 27] often include difficulties attempting to accurately undertake physical assessments such as measuring joint range of movement, power or tone, and try out equipment, eg hand splints or walking frames. Unsurprisingly, providing equipment necessitates a physical, in-person evaluation, along with adjustments and safety instructions which VC simply can't replicate.

VC is considered a valuable triage tool for patients who are at high risk of attending in-person appointments and useful for determining the risks and benefits to patients.[28] The pandemic saw a notable increase in telerehabilitation, and the pressing need for its rapid deployment led to the swift resolution of earlier obstacles such as the investment in VC technology. However, it still demands ongoing resources, training, education and appropriate clinic facilities. VC operating guides have been produced to maximise clinician learning[29,30] and there are some reported benefits to employing a technology expert to support any potential barriers that patients and clinicians might experience accessing VC.[31,32] A VC 'champion' or technology expert would help support our ongoing clinics, allowing clinicians and patients to focus on the content of the VC. Increasing confidence in using VC, for anyone, would be a key feature in the future of VC in complex neurorehabilitation.

There are limitations to this survey. In total four surveys were developed and used; therefore, findings need to be interpreted with caution. PT, doctors and SLT used the same survey and OT used two surveys with additional questions. However, all surveys contained the same three questions reported in these results. Although free text comments add to results, a single survey design would have been more unified.

VC was introduced into our service during a time where there were limited options for neurorehabilitation intervention due to the pandemic, which may have positively influenced confidence in the platform and perhaps patients and clinicians were biased towards using the system, or accepting of it for a specific intervention, because it was the best available option under challenging circumstances.

Responders were self-selecting, therefore the survey response rate is unknown, and we do not know the number of non-responders or those who did not answer the survey or were unable. We need to consider that some individuals may have declined a VC and therefore negative experiences and views may have been missed. We did not collect level of disability or type of neurological condition, which may have impacted on decisions to take part in a VC.

There may be skewed survey responses as individuals opted to take part due to potentially being more technologically advantaged. Furthermore, it is not possible to know if individuals completed the survey more than once.

One technical issue that clinicians reported was a difficulty sharing resource information within the AA platform. Any additional paperwork or information had to be sent before or after the VC, necessitating an extra administrative process. NHS digital solutions and future planning of VC technology would benefit from co-design with operational service managers, clinicians, patients and digital innovators.[29]

The NHS Long Term Plan is committed to reducing face-to-face appointments by up to a third.[33] The findings of this survey allow services to consider interventions which are likely to work successfully and be of greater benefit to all, such as fatigue management. Incorporating VC for elements such as education, history taking, discussions and talking therapies in appointments could enhance aspects of healthcare delivery in neurological therapy.[18,34,35] Offering a combined approach of VC and in-person sessions is likely to be of benefit. This may reduce the highly reported struggle that patients have with indirect costs of appointments, transport, travel, parking and arranging time off work or accompanying a relative, friend or carer.[28,36-38]

This survey presents the results of a rapid adoption of VC in a complex neurorehabilitation outpatient service during the pandemic. It indicates that VCs were possible and all groups found that they could use the system. Positively, VC offered even the most impaired neurological patients access to clinical interventions.

Further study is needed to evaluate the cost-effectiveness of VC, the barriers encountered by different patient groups using telerehabilitation, adverse events and patients' acceptance of the model. It will require a fundamental change in the operationalisation of appointments, use of digital systems, investment and planning at strategic level across the NHS to build on the lessons learned. Furthermore, it is essential that professional regulators work together to support the implementation of telerehabilitation with members, providing a crucial framework for delivery of safe interventions. The development of a consensus guideline of VC in neurorehabilitation that establishes details of monitoring and evaluating interventions is crucial.[14]

Conclusions

Our survey responses represent a real-time evaluation of VC during the pandemic. Fatigue management delivered virtually resulted in a local service change that has benefited both patients and occupational therapists.

Face-to-face sessions were considered important and valued by all groups for physical assessment and hands-on treatment and considered not suitable for VC.

Long-term investment in technology and reporting successful use cases from service users and clinicians are important for the sustainability of telerehabilitation. Evaluating the benefits and limitations, including adverse events and cost benefit analysis in a larger population of people with neurological conditions, is warranted.

CRediT authorship contribution statement

A. Saif: Writing – original draft, Methodology, Investigation, Data curation, Conceptualization. **Charlotte Winward:** Writing – review & editing, Writing – original draft, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Isabelle Di Pierro:** Writing – review & editing, Resources, Project administration, Investigation, Data curation. **Katie Butler:** Writing – review & editing, Supervision, Investigation, Conceptualization. **Judy Cornish:** Writing – review & editing, Investigation, Conceptualization. **Helen Dawes:** Writing – original draft, Formal analysis, Writing – review & editing. **Johnny Collett:** Writing – review & editing, Writing – original draft, Supervision, Methodology, Investigation, Formal analysis, Data curation.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Acknowledgement

Charlotte Winward acknowledges the support of the National Institute for Health Research (NIHR) Oxford Health Biomedical Research Centre, NIHR Oxford Health Clinical Research Facility and the Oxford Institute for Nursing, Midwifery and Allied Health Research (OxINMAHR). The views expressed are those of the authors and not necessarily those of the NIHR, UK National Health Service, or the UK Department of Health and Social Care.

With thanks to Terry Georgson and Nigel Parkin Oxford University Hospital Foundation Trust Service information and Digital Department for Medical Rehab Division.

Data availability statement

The data in this analysis are clinical audit data and therefore cannot be shared for legal/ thical reasons.

References

1. Cramer SC, Dodakian L, Le V, *et al*. Efficacy of home-based telerehabilitation vs in-clinic therapy for adults after stroke: a randomized clinical trial. *JAMA Neurol*. 2019;76(9):1079–1087. doi:10.1001/jamaneurol.2019.1604.
2. Zasadzka E, Trzmiel T, Pieczyńska A, Hojan K. Modern technologies in the rehabilitation of patients with multiple sclerosis and their potential application in times of COVID-19. *Medicina (Mex)*. 2021;57(6):549. doi:10.3390/medicina57060549.
3. Cilia R, Mancini F, Bloem BR, Eleopra R. Telemedicine for parkinsonism: a two-step model based on the COVID-19 experience in Milan, Italy. *Parkinsonism Relat Disord*. 2020;75:130–132. doi:10.1016/j.parkreldis.2020.05.038.
4. Knepley KD, Mao JZ, Wieczorek P, Okoye FO, Jain AP, Harel NY. Impact of telerehabilitation for stroke-related deficits. *Telemed J E-Health Off J Am Telemed Assoc*. 2021;27(3):239–246. doi:10.1089/tmj.2020.0019.
5. van den Bergh R, Bloem BR, Meinders MJ, Evers LJW. The state of telemedicine for persons with Parkinson's disease. *Curr Opin Neurol*. 2021;34(4):589–597. doi:10.1097/WCO.0000000000000953.
6. Salbach NM, Mountain A, Lindsay MP, *et al*. Canadian Stroke best practice recommendations: virtual stroke rehabilitation interim consensus statement 2022. *Am J Phys Med Rehabil*. 2022;101(11):1076–1082. doi:10.1097/PHM.0000000000002062.
7. Roy B, Nowak RJ, Roda R, *et al*. Teleneurology during the COVID-19 pandemic: a step forward in modernizing medical care. *J Neurol Sci*. 2020;414:116930. doi:10.1016/j.jns.2020.116930.
8. Stevens S. *Important and Urgent – Next Steps On NHS Response to COVID-19*. NHS England; 2020 online [eLetter]. Published online March 17. https://www.england.nhs.uk/coronavirus/wp-content/uploads/sites/52/2020/03/urgent-next-steps-on-nhs-response-to-covid-19-letter-simon-stevens.pdf.
9. Delivery of Healthcare during the Pandemic. *BMA Covid Rev*. 2022;3:50. British Medical Association. bma-covid-review-report-3-june-2022.pdf .
10. Greenhalgh T, Wherton J, Shaw S, Morrison C. Video consultations for covid-19. *BMJ*. 2020;368:m998 Published online March 12. doi:10.1136/bmj.m998.
11. Ostrowska PM, Śliwiński M, Studnicki R, Hansdorfer-Korzon R. Telerehabilitation of post-stroke patients as a therapeutic solution in the era of the Covid-19 pandemic. *Healthc Basel Switz*. 2021;9(6):654. doi:10.3390/healthcare9060654.
12. Wherton J, Greenhalgh T, Hughes G, Shaw SE. The role of information infrastructures in scaling up video consultations during COVID-19: mixed methods case study into opportunity, disruption, and exposure. *J Med Internet Res*. 2022;24(11):e42431. doi:10.2196/42431.
13. Tchero H, Tabue Teguo M, Lannuzel A, Rusch E. Telerehabilitation for stroke survivors: systematic review and meta-analysis. *J Med Internet Res*. 2018;20(10):e10867. doi:10.2196/10867.
14. Laver KE, Adey-Wakeling Z, Crotty M, Lannin NA, George S, Sherrington C. Telerehabilitation services for stroke. *Cochrane Database Syst Rev*. 2020;1(1):CD010255. doi:10.1002/14651858.CD010255.pub3.
15. Thiyagarajan A, Grant C, Griffiths F, Atherton H. Exploring patients' and clinicians' experiences of video consultations in primary care: a systematic scoping review. *BJGP Open*. 2020;4(1) bjgpopen20 × 101020. doi:10.3399/bjgpopen20x101020.
16. Seron P, Oliveros MJ, Gutierrez-Arias R, *et al*. Effectiveness of telerehabilitation in physical therapy: a rapid overview. *Phys Ther*. 2021;101(6):pzab053. doi:10.1093/ptj/pzab053.
17. Suso-Martí L, La Touche R, Herranz-Gómez A, Angulo-Díaz-Parreño S, Paris-Alemany A, Cuenca-Martínez F. Effectiveness of telerehabilitation in physical therapist practice: an umbrella and mapping review with meta–meta-analysis. *Phys Ther*. 2021;101(5):pzab075. doi:10.1093/ptj/pzab075.
18. Ellis H, Allsopp L, Tourle K, Moore K, Potter KJ, Dharm-Datta S. Overcoming adversity: building a remote interdisciplinary neurorehabilitation service during the COVID-19 pandemic. *Future Healthc J*. 2022;9(3):346–350. doi:10.7861/fhj.2021-0053.
19. Patel UK, Malik P, DeMasi M, Lunagariya A, VB Jani. Multidisciplinary approach and outcomes of tele-neurology: a review. *Cureus*. 2019;11(4):e4410. doi:10.7759/cureus.4410.
20. Hung Kn G, Fong KN. Effects of telerehabilitation in occupational therapy practice: a systematic review. *Hong Kong J Occup Ther HKJOT*. 2019;32(1):3–21. doi:10.1177/1569186119849119.
21. Eysenbach G. Improving the quality of web surveys: the checklist for reporting results of internet E-Surveys (CHERRIES). *J Med Internet Res*. 2004;6(3):e34. doi:10.2196/jmir.6.3.e34.
22. Saif A, Tan Juan, Packwood Kerri, Iqbal Nawaal. *Setting Up a Neurorehabilitation Telemedicine Clinic*. University of Oxford; 2020 Presented at 2019. https://drive.google.com/file/d/1gjcJKKDlAKDKEbTK_TQDRSabdksbCaE9/view.
23. van Kessel K, Wouldes T, Moss-Morris R. A New Zealand pilot randomized controlled trial of a web-based interactive self-management programme (MSInvigor8) with and without email support for the treatment of multiple sclerosis fatigue. *Clin Rehabil*. 2016;30(5):454–462. doi:10.1177/0269215515584800.
24. Pöttgen J, Moss-Morris R, Wendebourg JM, *et al*. Randomised controlled trial of a self-guided online fatigue intervention in multiple sclerosis. *J Neurol Neurosurg Psychiatry*. 2018;89(9):970–976. doi:10.1136/jnnp-2017-317463.
25. Finlayson M, Akbar N, Turpin K, Smyth P. A multi-site, randomized controlled trial of MS INFoRm, a fatigue self-management website for persons with multiple sclerosis: rationale and study protocol. *BMC Neurol*. 2019;19(1):142. doi:10.1186/s12883-019-1367-6.
26. Assenza C, Catania H, Antenore C, *et al*. Continuity of Care during COVID-19 lockdown: a survey on stakeholders' experience with telerehabilitation. *Front Neurol*. 2020;11:617276. doi:10.3389/fneur.2020.617276.
27. Nuara A, Fabbri-Destro M, Scalona E, Lenzi SE, Rizzolatti G, Avanzini P. Telerehabilitation in response to constrained physical distance: an opportunity to rethink neurorehabilitative routines. *J Neurol*. 2022;269(2):627–638. doi:10.1007/s00415-021-10397-w.
28. Brennan K, Curran J, Barlow A, Jayaraman A. Telerehabilitation in neurorehabilitation: has it passed the COVID test? *Expert Rev Neurother*. 2021;21(8):833–836. doi:10.1080/14737175.2021.1958676.
29. Wherton Joseph, Shaw Sara, Papoutsi Chrysanthi, Seuren Lucas, Greenhalgh Trisha. Guidance on the introduction and use of video consultations during COVID-19: important lessons from qualitative research. *BMJ Lead*. 2020;4(3):120. doi:10.1136/leader-2020-000262.
30. Video consulting with your NHS: guides for patients, staff and trusts. Published online January 13, 2022. https://www.england.nhs.uk/publication/video-consulting-with-your-nhs-guides-for-patients-staff-and-trusts/.
31. Chen Y, Chen Y, Zheng K, *et al*. A qualitative study on user acceptance of a home-based stroke telerehabilitation system. *Top Stroke Rehabil*. 2020;27(2):81–92. doi:10.1080/10749357.2019.1683792.
32. Beare B, Doogan CE, Douglass-Kirk P, Leff AP, Ward N. Neuro-Rehabilitation OnLine (N-ROL): description and evaluation of a group-based telerehabilitation programme for acquired brain injury. *J Neurol Neurosurg Psychiatry*. 2021;92(12):1354–1355. doi:10.1136/jnnp-2021-326809.
33. The NHS long term plan. Published online January 7, 2019. https://www.longtermplan.nhs.uk/online-version/chapter-1-a-new-service-model-for-the-21st-century/4-digitally-enabled-primary-and-outpatient-care-will-go-mainstream-across-the-nhs/.
34. Ganesan B, Fong KNK, Meena SK, Prasad P, Tong RKY. Impact of COVID-19 pandemic lockdown on occupational therapy practice and use of telerehabilitation: a cross sectional study. *Eur Rev Med Pharmacol Sci*. 2021;25(9):3614–3622. doi:10.26355/eurrev_202105_25845.
35. Peretti A, Amenta F, Tayebati SK, Nittari G, Mahdi SS. Telerehabilitation: review of the State-of-the-Art and Areas of Application. *JMIR Rehabil Assist Technol*. 2017;4(2):e7. doi:10.2196/rehab.7511.
36. Eddison N, Leone E, Healy A, Royse C, Chockalingam N. The potential impact of allied health professional telehealth consultations on health inequities and the burden of treatment. *Int J Equity Health*. 2022;21(1):91. doi:10.1186/s12939-022-01689-2.
37. Duruflé A, Le Meur C, Piette P, Fraudet B, Leblong E, Gallien P. Cost effectiveness of a telerehabilitation intervention vs home based care for adults with severe neurologic disability: a randomized clinical trial. *Digit Health*. 2023;9:20552076231191001. doi:10.1177/20552076231191001.
38. Tenforde AS, Borgstrom H, Polich G, *et al*. Outpatient Physical, occupational, and speech therapy synchronous telemedicine: a survey study of patient satisfaction with virtual visits during the COVID-19 pandemic. *Am J Phys Med Rehabil*. 2020;99(11):977–981. doi:10.1097/PHM.0000000000001571.