

Patients' Experiences of Remote Neurology Consultations during the COVID-19 Pandemic

Mary Clare McKenna^a Mahmood Al-Hinai^a David Bradley^a Elisabeth Doran^a
Isabelle Hunt^a Siobhan Hutchinson^a Yvonne Langan^a Deirdre O'Rourke^a
Raga Qasem^a Janice Redmond^a Emma Troy^a Colin P. Doherty^{a, b, c}

^aNeurology Department, St. James's Hospital, Dublin, Ireland; ^bAcademic Unit of Neurology, Trinity College Dublin, Dublin, Ireland; ^cFutureNeuro, Science Foundation Ireland Research Centre for Chronic and Rare Neurological Diseases, Royal College of Surgeons in Ireland, Dublin, Ireland

Keywords

Telehealth · Remote consultations · Teleneurology · Telemedicine

Abstract

Telemedicine has been widely implemented during the COVID-19 global pandemic to enable continuity of care of chronic illnesses. We modified our general neurology clinic to be conducted using remote audio-only telephone consultations. We included all patients over a 10-week period who agreed to both a telephone consultation and a questionnaire afterwards in order to ascertain the patient's perspective of the experience. There were 212 participants consisting of men (43.8%) and women (56.2%). The mean \pm standard deviation of age was 47.8 ± 17.0 (range 17–93) years. For the most part, patients found remote consultations either “just as good” (67.1%) or “better” (9.0%) than face-to-face consultations. Those who deemed it to be “not as good” were significantly older (52.3 ± 17.9 years vs. 46.6 ± 16.6 years, $p = 0.045$) or were more likely to have a neurological

disorder that required clinical examination, namely, a neuromuscular condition (66.7%, $p = 0.002$) or an undiagnosed condition (46.7%, $p = 0.031$). At the height of the COVID-19 global pandemic, most patients were satisfied with remote consultations. The positive feedback for remote consultations needs to be verified outside of this unique scenario because the results were likely influenced by the patients' apprehension to attend the hospital amongst other factors.

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Background

As the COVID-19 global pandemic unfolded, telemedicine has been embraced in the outpatient setting to allow for the continuity of care of chronic illnesses [1–3]. Virtual clinic consultations facilitated formulating differential diagnosis, arranging further tests, and initiating or modifying current treatment [4, 5]. It also helped to identify patients who required an urgent deferred clinical examination [2–4]. Overall, this approach reduced the need

to attend the outpatient department and in turn reduced the risk of exposure to COVID-19 [2, 5, 6]. Recent appraisals have shown that both clinicians and patients are satisfied with the swift transition to telemedicine amidst the COVID-19 global pandemic and are keen to avail of this option in the future [3, 7]. The universal availability of telephones has led to it being one of the most commonly used media for remote consultations [7]. With this in mind, we modified our general neurology clinics to be conducted via remote audio-only telephone consultations at the height of the COVID-19 pandemic. After implementation, we sought our patients' opinions about this platform compared to face-to-face consultations.

Methods

We modified our general neurology clinics to be conducted via remote consultations using synchronous real-time audio-only telephone communication. Patients who verbally consented to remote consultation received a telephone call at the scheduled appointment time from the clinician. Both new and review patients were included. Patients sometimes nominated another party (e.g., carer or family member) to speak on their behalf, particularly if they had underlying hearing, learning, or cognitive impairment. At the end of the consultation, all patients were asked to participate in a short questionnaire, as outlined in the online supplementary material; see www.karger.com/doi/10.1159/000511900 for all online supplementary material. This study was conducted over a 10-week period from March 23rd until May 25th, 2020. During this time frame, all outpatient consultations were carried out remotely. The St. James' Hospital Research and Innovation Office granted approval. Data were collected and stored in accordance with general data protection regulation guidelines. Descriptive statistics are presented as number and percent for categorical variables and as mean and standard deviation for continuous variables. Differences in independent categorical variables were tested using the χ^2 test. Differences between groups of continuous variables were tested by the independent samples *t* test. All statistics were performed using IBM SPSS for MAC version 25 (Armonk, NY, USA). Statistical significance was set as $p < 0.05$.

Results

There were 212 participants. Missing data were as follows: sex ($n = 15$); age ($n = 18$); and diagnosis ($n = 4$). There were 85/194 (43.8%) men and 109/194 (56.2%) women. The mean age was 47.8 ± 17.0 years (range 17–93). There were a variety of neurological disorders including epilepsy (84/208; 40.4%), multiple sclerosis (43/208; 20.7%), migraine or other headache disorders (27/208; 13.0%), undiagnosed condition awaiting investigations or clinical review (15/208; 7.2%), peripheral

neuropathy (13/208; 6.3%), neuromuscular condition (9/208; 4.3%), Parkinson's disease or other movement disorders (7/208; 3.4%), narcolepsy or other sleep disorders (6/208; 2.9%), others (3/208; 1.4%), and stroke or TIA (1/208; 0.5%).

Regarding clinical status, the majority of patients stated that their neurological condition was stable during the COVID-19 pandemic (174/206; 84.5%), a small number stated that it was worse (18/206; 8.7%), and a small number thought that it was better (14/206; 6.8%). Those who deemed that their status was better were more likely to have epilepsy than any other diagnosis (10/13 vs. 3/13, $p = 0.007$). Regarding ease of contacting the neurology service, almost all patients found it was either easy to contact (120/211; 56.9%) or that they did not need to make contact (88/211; 41.7%), but only a few patients found it difficult to make contact (3/211; 1.4%). For the most part, patients had not been advised to attend the hospital (185/210; 88.1%), and a substantial proportion of those who had been advised to attend the hospital were too afraid to do so (10/25; 40%).

About three-quarters of our patients found remote consultations either “just as good” (141/210; 67.1%) or “better” (19/210; 9.0%) than face-to-face consultations. Those who deemed “not as good” were significantly older (52.3 ± 17.9 years vs. 46.6 ± 16.6 years, $p = 0.045$), but there was no difference in sex ($p = 0.231$) or clinical status ($p = 0.916$). Patients who found virtual clinic to be “not as good” were more likely to have an underlying neurological disorder that would benefit from clinical examination, namely, a neuromuscular condition (6/9; 66.7%, $p = 0.002$) or an undiagnosed condition awaiting investigation or clinical review (7/15; 46.7%, $p = 0.031$).

Discussion

Patients' experiences of remote neurology outpatient consultations during the COVID-19 global pandemic were favourable [6,7]. The minority of patients who thought that it was “not as good” tended to be older or were more likely to have neurological disorders that required clinical examination, such as neuromuscular conditions. The level of satisfaction may have been influenced by the patients' perceived risk of contracting COVID-19; patients were apprehensive to attend the hospital and appreciated the opportunity to avail of remote consultations instead. Nevertheless, patients' experiences of telemedicine tend to be quite positive due to factors independent of this, such as convenience [3, 7, 8]. The clinical

status of most patients was stable. Patients with epilepsy were more likely to report that their clinical status had improved compared to all other neurological diagnoses.

This study depicts a real-world experience of promptly implementing remote consultations during the COVID-19 global pandemic. In the absence of established infrastructure within a short timeframe, remote consultations were conducted via audio-only telephone communication. Differential diagnoses and treatment decisions were formulated on clinical history alone; there were no nonverbal communication cues. Despite shortcomings, audio-only telephone communication had a number of strengths. It was readily available and easily accessible. Not all patients have access to electronic devices that support video links, and the consultation is not dependent on the quality of internet broadband connections [3, 7]. Anecdotally, we suspect that older patients prefer audio-only telephone communication compared to audio and visual communication platforms [2]. There were additional challenges of appointment time keeping and restricted staffing at secretarial, nursing, and medical levels due to illness, close contact status, or redeployment.

This study had many limitations. The questionnaire did not collate information about whether it was a new or review patient consultation. Selection bias occurred because only patients who agreed to partake in both the remote consultation and the questionnaire were included. No data were collected on those who declined involvement at either stage. Therefore, it is unclear why certain neurological conditions are not represented, such as functional neurological disorders or cognitive impairment. There was also acquiescence bias. The questionnaire was conducted after the remote consultation such that respondents may have a tendency to select positive options such as choosing that it was “just as good” or “better” than face-to-face consultations [3]. It was also carried out at the height of the global pandemic when fear and anxiety surrounding the risk of exposure to COVID-19 was paramount; as previously mentioned, these sentiments likely influenced the positive feedback from patients. Given the extent of the limitations, these findings pertain to a unique situation and should not be extrapolated outside of this setting.

Conclusion

In this self-selected cohort who had agreed to a remote consultation, most patients were satisfied with remote audio-only telephone consultations during the global CO-

VID-19 pandemic. A minority of patients either preferred or were deemed to need in-person review. Amongst other limitations, these findings are likely confounded by patients' apprehension to attend the hospital at that time. It would be worthwhile re-evaluating these findings after the fear and anxiety has settled and after the telemedicine infrastructure has been modernized to include an audio and visual communication platform and see if the positive feedback prevails. Telemedicine is likely to become an integral part of routine care for chronic neurological illnesses hereafter, as a promising advancement that was brought to the forefront during the COVID-19 pandemic [4, 9].

Statement of Ethics

The study protocol was granted approval by St. James' Hospital Research and Innovation Office (Reference No. 6171). Given the remote setting of the questionnaire, verbal consent was accepted instead of written consent. All participants gave verbal informed consent prior to participation in the consultation and questionnaire.

Conflict of Interest Statement

The authors declare that there are no conflicts of interest.

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Author Contributions

M.C.Mc.K.: study design, data acquisition, data analysis, data interpretation, and drafting and final approval of the manuscript. M.A.H., E.D., I.H., R.Q., and E.T.: data acquisition and editing and final approval of the manuscript. D.B., S.H., Y.L., D.O.R., and J.R.: study design, data acquisition, and editing and final approval of the manuscript. C.P.D.: study conception and design, study supervision, data acquisition, and editing and final approval of the manuscript.

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