

Physicians Preferences of Virtual Versus In-Person Visits in Neuromuscular Clinical Practice

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Introduction

The use of telemedicine in clinical practice is becoming popular and many practices have adopted some form of telemedicine or plan to do so in the future¹. The COVID-19 pandemic compelled the medical community to utilize telemedicine and policies were rapidly changed to continue patient care during the pandemic². While the role of telemedicine is well established in certain fields of medicine, its role in other disciplines like neuromuscular medicine is not as clear. There have been small scale studies that assessed satisfaction for subgroups of patients like ALS³. However, data on physician perspectives is almost non-existent. A recent survey of neuromuscular patients on their preference of virtual vs in-person visits showed an inclination towards in-person visits (in press). However, the opinion of neuromuscular physicians on telemedicine is essential for understanding the future direction of teleneurology. We designed this survey to answer the question of physician preference and the factors influencing their decision.

Method

Study Design and Data Collection

We called for participants using the forum provided by Rick's Real NeuroMuscular Friends (RRNMFs), an online group of about 2000 neuromuscular disorders physicians. 94 physicians were interested. We used an online form (Microsoft Forms) composed of eleven questions to survey the interested 94 neuromuscular specialists from the USA and Canada during September 2020 (the questionnaire and consent template uploaded in supplementary materials). The survey was conducted unanimously, and surveyed physicians consented to participate in the study while their personal information was kept discrete. We conducted a descriptive analysis of the data.

The primary outcome, neuromuscular physician visit preference, was assessed by the survey item "When

you see a new patient, what type of visit do you prefer?". Responses were categorized as 'Physical (face-to-face)', 'Virtual (through the phone or video-audio system)', or 'No preference'. The second question was "When you see a follow-up patient, what type of visit do you prefer?". Responses were categorized as 'Physical (face-to-face)', 'Virtual (through the phone or video-audio system)', or 'No preference'. Each question had 3 categories of responses.

Results

62.77% (n=59) were males, 32.98% (n=31) were females and 4 participants declined to declare their gender. 59.57% (n=56) were younger than 50 years old, 37.23% (n=35) were older than 50 years old while three declined to answer. Regarding the type of practice, 53.19% (n=50) worked in an academic-based practice while 18.09% worked in a group practice, 15.96% worked in hospitals, 5.32% in large HMO, and 6.38% in solo-based practices (table 1).

Table 1. Numbers and percentages of participants of the study divided according to their type of practice.

Practice type	Percentage of total	Number of participants
Academic based	53.19%	50
Group practice	18.09%	17
Hospital based	15.96%	15
Large HMOs	5.32%	5
Solo practice	6.38%	6
Declined to answer	1.06%	1
Grand Total	100.00%	94

When seeing new patients, 90.43% (n=85) of the participants preferred physical visits, 4.26% (n=4) preferred virtual visits while the rest had no preference or declined to answer. In response to their preference in seeing follow-up patients, 44.68% (n=42) preferred physical visits, 28.72% (n=27) preferred virtual visits while 25.53% (n=24) had no preference. Moreover, 45.74% (n=43) of the participants said that practicing telemedicine did not influence the number of procedures like EMG and biopsies, while 38.30% (n=36) thought it would decrease them, and 13.83% (n=13) thought it would increase them. The majority thought that telemedicine reduces revenue 58.51% (n=55), while 27.66% (n=26) declared no effect on revenue, and 12.77% (n=12) thought it would increase revenue. When participants were asked about the quality of service, 57.45% (n=54) answered in the negative, 24.47% (n=23) said telemedicine did not affect the quality of service, while 17.02% (n=16) thought that the quality of service would improve. 44.68% (n=42) somewhat agreed that quality time spent with patients would be reduced, 18.09% (n=17) strongly agreed with the previous statement, while 36.17% (n=34) disagreed. Most surveyed physicians agreed that telemedicine was time-efficient: 57.45% (n=54) somewhat

agreed, and 26.60% (n=25) strongly agreed, while 14.89% (n=14) disagreed. 52.13% (n=49) somewhat agreed that telemedicine improved patient compliance, 18.09% (n=17) strongly agreed, while 28.72% (n=27) disagreed. 62.77% (n=59) declared that telemedicine would be a long-term solution in clinical practice, 31.91% (n=30) thought telemedicine was effective only during the pandemic, while 4.26% (n=4) said it was not efficient in both cases. 58.51% (n=55) revealed that telemedicine did not affect workload, while 26.60% (n=25) thought it increased workload and

13.83% (n=13) thought telemedicine decreased workload. Finally, 75.53% (n=71) preferred to reveal a new diagnosis during a physical visit, and none 0.00% during a virtual visit, while 23.40% (n=22) had no preference.

Discussion

Our study showed that the majority of the surveyed neuromuscular disorders physicians preferred in-person visits for new patients. Even for follow-up visits, there was a high inclination towards in-person visits (44%), but almost

Table 2. Physician preference of the study type and revealing a new diagnosis.

Percentage of total (n)	New patient preference		Follow up patient preference		Revealing new diagnosis	
No preference	3.19%	(3)	25.53%	(24)	23.40%	(22)
Physical visits	90.43%	(85)	44.68%	(42)	75.53%	(71)
Virtual visits	4.26%	(4)	28.72%	(27)	00.00%	(0)
total		(92)		(93)		(93)

Table 3. Subjects opinion on the number of procedures, revenue, service quality, and workload

Percentage of total (n)	Influence of telemedicine on number of procedures		Influence of telemedicine on revenue		Influence of telemedicine on the quality of services		Influence of telemedicine on workload	
Increase in numbers / Revenue /quality	38.30%	(36)	58.51%	(55)	17.02%	(16)	13.83%	(13)
Decrease in numbers / Revenue /quality	13.83%	(13)	12.77%	(12)	24.47%	(23)	26.60%	(25)
No effect	45.74%	(43)	27.66%	(26)	57.45%	(54)	58.51%	(55)
Total		(92)		(93)		(93)		(93)

Table 4. Subjects opinion on the effect of telemedicine on the reduction of quality time with patients, time-efficiency, and improving patient's compliance

Percentage of total (n)	telemedicine will reduce the quality time with patients		telemedicine is time-efficient		telemedicine will improve patient's compliance	
Strongly agree	18.09%	(17)	26.60%	(25)	18.09%	(17)
Somewhat agree	44.68%	(42)	57.45%	(54)	52.13%	(49)
Disagree	36.17%	(17)	14.89%	(25)	28.72%	(27)
Total		(93)		(93)		(93)

half the physicians either preferred virtual visits (28%) or did not have a preference (25%). The results are not surprising but differ from other surveys which have shown higher satisfaction rates and a tendency towards choosing telemedicine in future⁴. The data on physician preference is very limited and almost non-existent in the field of neuromuscular medicine. The comparative studies have key design differences. The studies done before the COVID-19 pandemic had compared the satisfaction and feasibility of telemedicine in selected patient populations with set models^{4,5}. Since the start of the pandemic, physicians were forced to use telemedicine for all types of patients to provide care in the era of social distancing and we entered this practice unprepared. Hence, we faced multiple challenges including policies regarding reimbursement, lack of trained staff, and equipment¹. It affected everyone differently and our data provides how neuromuscular physicians feel about telemedicine use in the future.

Adoption of telemedicine in routine clinical practice faces multiple challenges and giving this option to patients comes at a cost. Despite the new regulations of telemedicine reimbursement matching that of in-office visits, 97% of private practices reported negative financial outcomes during the pandemic⁶. Our survey showed similar results as the majority (58%) of physicians said that telemedicine decreases revenue. This is an important factor that will influence the implementation of telemedicine in the future.

The fact that physicians preferred in-person visits for new patients, and none chose virtual visits to reveal a new diagnosis reveals that physicians are not mere diagnosticians. The first interaction with the patient is not only meant to make the best judgment about the diagnosis and exam but is also the first step to building a relationship. Preferences of this study are justified by the fact that in the neuromuscular specialty, a detailed neurological examination is needed which is not feasible virtually, and neurophysiology is often used as an extension of the physical examination. Most neuromuscular conditions are chronic and require long-term care. To build rapport with the patient, gestures, face-to-face interaction, assessing personality, and patient expectation is best done in person. This is compromised in telecommunication. With the advancement in technology and more preparation to facilitate virtual interaction, the opinion is subject to change.

Despite physicians choosing in-person visits, the majority agree that telemedicine will be a long-term solution and does not affect the quality of service. This indicates that in physician's opinion, there may be a role of telemedicine although in a selected patient population. One main limitation of our survey is that we do not have data on the challenges and limitations faced by each practice and if

Table 5. Telemedicine efficiency during COVID-19 pandemic versus a long-term solution

Percentage of total (n)		
During the pandemic only	31.91%	(30)
Long term solution	62.77%	(59)
Not efficient at all	4.26%	(4)
Total		(93)

it influenced the decision of choosing visit type. Since the COVID-19 pandemic affected each practice differently, the barriers faced by one practice and hence the translation to workload and quality of care might be different. It will be helpful to know the individual challenges to come up with a solution.

In conclusion, despite the preference of telemedicine in many specialties of healthcare practices, neuromuscular physicians still prefer face to face visits especially in seeing new patients emphasizing the distinct nature and peculiarities of neuromuscular disease specialty. While preferences for new patients and breaking new diagnoses clearly favored physical visits, such preference only marginally favored follow-up visits. While most of the participants agreed that telemedicine improved patient's compliance and it was a time efficient solution, they still had doubts about the economic factors, quality of service, and time spent with patients. The COVID-19 pandemic imposed difficult questions in clinical practice, and while healthcare facilities and physicians showed flexibility in dealing with the new norms⁷, the prospect of the sudden change might take clinicians out of their comfort zone. Neuromuscular specialists preferred seeing new patients and revealing new diagnoses to patients in physical visits, but they also considered telemedicine a long-term method that would continue to increase in the post-pandemic future⁸. There was a crucial need to stimulate neuromuscular practices into adopting telemedicine by addressing their concerns and boosting the positive factors like continuing the current insurance policies and patient privacy flexibility.

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Appendix I. Questionnaire distributed to participants.

Preferences of virtual versus in-person visits in neuromuscular clinical practice

In supplementation to our study "Patient's preferences of virtual versus in-person visits in neuromuscular clinical practice" we would appreciate your participation in this survey to examine the physician's preferences of telemedicine in neuromuscular clinical practice. Your personal information will be strictly confidential.

* Required

* This form will record your name, please fill your name.

1. Do you agree to participate in this survey? *

Personal information will be strictly confidential.

Yes

No

2. Initials

For the purpose of reference please write your initials.

3. Age

For demographic data

8/24/2020

4. Gender

For demographic data

- Male
- Female
- Other
- Prefer not to say

5. Type of practice

What type is your institute or practice?

- Solo practice
- Group practice
- Large HMOs
- Hospital based
- Academic based

6. When you see a new patient, do you prefer...?

- Virtual visits
- Physical visits
- No preference

7. When you see a follow-up patient, do you prefer...?

- Virtual visits
- Physical visits
- No preference

8. Do you feel that practicing telemedicine will influence number of procedures such as EMG, biopsy, etc...?

- Increases number
- Decreases number
- No effect

9. In your opinion, what is the effect of telemedicine on revenue?

- Increases revenue
- Decreases revenue
- No effect

10. In your opinion, what is the effect of telemedicine on the quality of services?

- Improves quality
- Reduces quality
- No effect

11. How do you feel about this statement "telemedicine will reduce the quality time the health care professional spends with the patient"?

- Strongly agree
- Somewhat agree
- Disagree

12. How do you feel about this statement "telemedicine is time-efficient"?

- Strongly agree
- Somewhat agree
- Disagree

13. Do you think telemedicine is efficient during COVID-19 pandemic only or as a long term solution?

- During the pandemic only
- Long term solution
- Not efficient at all

14. How do you prefer revealing a new diagnosis?

- Virtually
- Physically (in person)
- No preference

15. Do you feel telemedicine will improve patient's compliance?

- Strongly agree
- Somewhat agree
- Disagree

16. How has telemedicine affected your workload?

- Increased workload
- Decreased workload
- No effect

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