

Sounding Board

The role of telehealth in the care of musculoskeletal pain conditions after COVID-19

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Abstract. The rise of virtual medicine through the use of e-Health technology was accelerated by the COVID-19 pandemic and remains a vital part of health care delivery today. Telehealth, a virtual health care delivery system through either electronic or telecommunication technology, may improve the ability to deliver care in resource poor areas or where barriers to access occur. Despite the obvious advantages to telehealth, the efficacy of virtual visits when compared to face-to-face health care interactions is a topic of much debate, especially with regards to areas of medicine which rely heavily on physical examination or demonstration of therapeutic exercises and movements. In this commentary, we review the efficacy of telehealth with a focus on prevention and treatment of musculoskeletal pain conditions, and explore areas for future research.

Keywords: Telehealth, musculoskeletal discomforts, new normal, e-Health, office workers, COVID-19

1. COVID-19 and the “new normal”

The spread of the coronavirus 2 (SARS-CoV-2) and the resulting COVID-19 pandemic has driven rapid change across the healthcare landscape. In response to World Health Organization (WHO) recommendations regarding stay at home policies, in-person healthcare visits decreased precipitously, and virtual visits became the norm. As stay at home orders relaxed, healthcare provider organizations from self-employed practitioners to massive

multi-center hospital conglomerates were faced with the challenge of reinstating contact, in a “new normal”, highly virtual world [1].

A unique set of benefits and disadvantages have surfaced in the wake of the widespread adoption of telehealth (the utilization of web- or broadcast-based communication platforms for the provision of healthcare services). For patients with substantial comorbidity burden and other preexisting conditions which complicate travel to in-person visits, telehealth can provide invaluable access to care. For individuals with hazard variables for contracting the still-prevalent COVID-19 virus, telehealth can help reduce transmission rates [2]. From a cost perspective, telehealth may reduce expenditure related to transportation and absence from work [3].

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Telehealth is not without its disadvantages, however. With regards to physical and occupational therapy, virtual visits may be poor substitutions for in-person evaluation and therapeutic intervention. Moreover, the COVID-19 pandemic has had a profound effect on global mental health. Stability of work environments and lack of financial security has contributed to rising rates of psychological distress [4]. Clinical staff and other healthcare personnel may experience even higher rates of psychological distress given increases in work hours, staffing shortages, and other pandemic-related stressors [5]. Telehealth has substantial limitations as a venue for delivery of mental health-related care, given the importance of body language communications and in-person support aspects for effective intervention.

Now, as the COVID-19 pandemic begins to subside worldwide, it is unclear what the “new normal” will bring with regards to provision of occupational therapy (OT) and physical therapy (PT)-related care. While many office workers have returned to work, a huge number have transitioned to remote work. How will this new reality impact the onset of musculoskeletal pain conditions (MSPC)? Some OT and PT offices have continued offering virtual visits in addition to in-person. Do our therapists have the appropriate training to optimally provide care in this setting? These questions and others will remain to be explored as we transition into the post-pandemic environment.

2. Telehealth for MSPC

MRPC are profoundly common, affecting more than 50% of adults at some point in their lives [6]. Well before the COVID-19 pandemic, practitioners were aware of the long-term ramifications of the excessively sedentary lifestyle of the office worker [7]. Now, with many day-to-day activities such as banking and shopping being largely replaced by the virtual environment, an even more sedentary lifestyle is permitted. Back and neck pain have been implicated as major contributors to lost work productivity, and can result in a large financial burden by reducing net household income [8]. Furthermore, these conditions are often seen unnecessarily by specialists, resulting in massive cost expenditure. Thus, the utilization of virtual services for musculoskeletal care may permit providers to reach a higher number of patients at lower total costs [9]. However, there is

a dearth of literature evaluating the efficacy of telehealth for treatment of MSDs specifically [10].

Telehealth (a more general term which encompasses all aspects of healthcare versus the more specific, yet commonly used term “telemedicine”) incorporates real-time videoconferencing (RTVC). Terms related to telehealth are outlined in Table 1. For billing purposes, Medicare has labeled RTVC as “telehealth” and the WHO has certified the adequacy of RTVC as a conveyance mechanism for rehabilitation protocols (i.e. telerehabilitation). Telehealth can consist of visits taking place in real time with patients (synchronous) and either before or after a real-time visit (nonconcurrent) [2]. Synchronous applications such as RTVC are cited most regularly within the literature in reference to utilization of telehealth for rehabilitation providers [11]. “Telerehabilitation” can be further subdivided into primarily language-based interventions (i.e. consultations for pre-surgical evaluation and evaluation of functional capacity based of descriptions of activities of daily living) and movement-based interventions (i.e. Neuro Formative Treatment or physical therapy mediated treatment of a complex shoulder pathology) [12].

Telehealth for the use of primarily language-based interventions via RTVC has been shown to demonstrate no clinically significant difference when compared to in-person visits [11]. Telehealth technology can also be used to share video messages both before and after the RTVC session to provide information that can enhance the therapeutic value for the patient (i.e. video demonstration of exercises and answers to frequently asked questions). Despite this finding, the literature remains insufficient to confirm that telehealth is non-inferior to in-person visits for use in language-based interventions. By contrast, interventions that require physical contact and demonstrations may not be as efficacious when conveyed through telehealth innovations.

3. Future investigation

Current literature related to the use of telehealth for rehabilitative purposes is lacking. More research is needed to demonstrate non-inferiority of language-based interventions and movement-based interventions in the virtual environment. Standardization of RTVC protocols as well as patient reported outcome and satisfaction metrics will be required to ensure that non-inferiority is met. Cost-benefit analyses are also indicated – are the cost-savings associated

Table 1

Wording related to telehealth is in a steady state of flux in the wake of the COVID-19 pandemic. A brief glossary of common telehealth terms is provided [1]

| Term | Definition |
|-----------------------------|--|
| Telemedicine | The provision of medicine at a distance through the use of information-sharing platforms (e.g., telephone, video-based communication platform, instant messaging service). |
| Telehealth | A broad term encompassing the purveyance of health-related content through the use of telecommunication technologies. |
| Telerehabilitation | A term used to encompass a wide range of encounters including therapeutic and rehabilitative services using telehealth technologies. |
| Synchronous communication | An encounter where information is exchanged simultaneously (e.g., real time video conferencing or telephone calls). |
| Real time videoconferencing | A telehealth encounter where both patient and provider are available and interacting simultaneously by video-based communication platform. |
| Asynchronous communication | Communication that does not occur simultaneously (e.g., secure patient messaging, forwarding video and image material for demonstration purposes). |

with virtual visits ultimately negated by lack of efficacy of these interventions? Future work should also aim to delineate if OT and PT practitioners have received enough training on virtual communication methodologies for prevention and treatment of MSPC, especially considering the important physical component to these visits. Moreover, investigation should aim to assess the most effective means of teaching telehealth communication skills: should standardized guidelines be created and executed or are these skills better learned through experience?

4. Conclusion

Rapidly accelerated by global lock-downs in the wake of the COVID-19 pandemic, telehealth is here to stay, has demonstrated efficacy across a limited body of evidence, and is associated with upfront cost savings. However, the use of telehealth is associated with certain challenges, especially in the setting of rehabilitative-type visits, such as those required for effective OT and PT. Future investigation is warranted to continue to assess the efficacy of telehealth.

Conflict of interest

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