Investigating Tele-Rehabilitation and the Feasibility of Wearable Rehabilitative Devices in a Virtual Environment

A Research Paper submitted to the Department of Engineering and Society

Presented to the Faculty of the School of Engineering and Applied Science

University of Virginia • Charlottesville, Virginia

In Partial Fulfillment of the Requirements for the Degree

Bachelor of Science, School of Engineering

Jahnavi Dave

Spring, 2025

On my honor as a University Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments

Advisor

Bryn E. Seabrook, Department of Engineering and Society

Investigating Tele-Rehabilitation and the Feasibility of Wearable Rehabilitative Devices in a Virtual Environment

Introduction

What if your road to recovery did not start in a specialized rehabilitation center, but in the comfort of your own home? Traditional rehabilitation treatments are often costly and reliant on rigid and stationery equipment found in clinics. For patients in remote areas or with limited financial means, frequent visits to such specialized facilities are not feasible, resulting in decreased sessions of prescribed exercises and slower recovery. According to a national survey of rural and urban populations, rural residents traveled more than twice the distance (17.8 miles) as urban residents (8.1 miles) for health care services (Akinlotan et al., 2021). This disparity in travel distance is even more pronounced for specialized care, where some rural residents must journey up to 90 to 100 miles to access the services they need (Meske et al., 2024). Recently, in the wake of the COVID-19 pandemic, the delivery of rehabilitation services through telehealth has increased (Matsumoto et al., 2021). Concurrently with technological innovations in wearable devices that can be used at home, patients in remote communities can receive convenient, virtual physical therapy sessions without having to travel even one mile.

This paper seeks to investigate the concept of tele-rehabilitation with wearable devices and how it could bridge gaps in rehabilitation treatment access. Using exoskeletons, prosthetics, or other devices in a tele-communicative environment could redefine the healing process. How does the relationship between healthcare providers, private and public healthcare policies, and patients influence the adoption of wearable devices into tele-rehabilitation? Using Actor-Network Theory (ANT), this paper explores this research question and dive into the feasibility of a future where recovery is just a click away.

Background

More than 127 million people in the United States suffer from musculoskeletal conditions, creating a substantial need for effective rehabilitation treatments. In fact, about 50 million Americans seek physical therapy services annually (*Mastermindbehavior.com*, 2024). Physical therapy is a type of rehabilitation that focuses on improving strength, flexibility, and mobility. The terms 'physical therapy' and 'rehabilitation' are used interchangeably in this paper. Despite the widespread need for rehabilitation services, access remains a significant challenge, particularly for individuals in rural and underserved areas. Minimizing the barrier of distance can be accomplished through tele-rehabilitation, especially as patients have more access to wearable device technology that empower them in their recovery (Kang & Exworthy, 2022).

Healthcare providers play a pivotal role in the adoption of wearable muscle rehabilitation devices. Their attitudes towards technology, willingness to incorporate new tools into practice, and ability to educate patients about the benefits of such devices are critical factors (Catalán et al., 2021). In a 2024 survey of five orthotics and prosthetic providers, they described several benefits of tele-rehabilitation for patients including access to a timely, convenient, and efficient service that works with the patients' demanding professional, personal, and social schedules. Given that this virtual platform helped improve access, providers noted there were fewer no-shows or last-minute cancellations. (Dillon et al., 2024). Appalachian Regional Healthcare in Barbourville, WV started offering tele services to stroke patients. While these services focused on the neural instead of the rehabilitative aspect, providers said it gave "a better chance of stroke survival and recovery" and showcases positive provider response to tele-rehabilitation (*Appalachian Regional Healthcare*, 2021).

The relationship between healthcare providers and insurance companies is also critical in determining the adoption of wearable devices in tele-rehabilitation. Private insurance and public healthcare policies influence which technologies are covered and how they are reimbursed. If wearable rehabilitation devices like robot exoskeletons or prosthetics are not included in insurance coverage, both the patients and the providers may be less inclined to use them. Private insurance coverage for prosthetics and orthotics varies by plan and provider, but most plans offer some level of coverage for medically necessary devices. Patients may also still have to pay a deductible and co-pay depending on their coverage package. (*Primecareprosthetic.com*, n.d.). In the past, Medicare coverage only applied to prosthetic devices and not remote rehabilitation sessions (Dobson et al., 2016). However, Medicare has begun to expand its coverage for telehealth services, which could include reimbursement for wearable rehabilitation devices, thereby incentivizing use among providers and patients (*Telehealth*, n.d.).

Patients themselves are a vital component of this dynamic. Their acceptance and willingness to use wearable rehabilitation devices can significantly impact the success of tele rehabilitation initiatives. Factors such as technological literacy, personal motivation, and previous experiences with rehabilitation technologies all play a role in patient engagement. In fact, patients with muscle mobility issues often yearn for family contact and frequently discontinue rehabilitation training sessions and return home to their local community. This emphasizes the value of home and community-based rehabilitation, where patients have the option to perform daily training with remote support from therapists (Sun et al., 2022).

Actor-Network Theory (ANT) Framework

The integration of wearable rehabilitation devices as a tool into tele-rehabilitation hinges on a complex relationship between healthcare providers, insurance policies, and patients. While

there are other factors that influence this platform (such as access to wireless connections, home life, etc.), these are the three that are focused on in this research. To understand the players involved in the telehealth and tele-rehabilitation realm, this STS research paper employs Actor-Network Theory (ANT), a social theory and research method that views everything as part of a constantly shifting network of relationships. Using the ANT framework, this paper creates a web of connections between three entities that play a role in this virtual sphere, specifically in rural America: healthcare practitioners, private and public insurance programs, and rehabilitative device users.

ANT is a methodology developed in the 1980s by scholars working primarily in the sociology of science and technology (Crawford, 2020). Early ANT was developed by John Law, Michel Callon, and Bruno Latour. Initially they were tunnel-visioned in sorting of objects of study into rigidly distinct categories: the social and the natural. They wanted to understand how humans and nonhumans (including tools, technologies, etc.) come together (Crawford, 2020). ANT has been especially helpful for studying medical health systems. This paper utilizes this framework because it is helpful in articulating the complex interactions of patients, medical devices, physicians, and insurance companies (Crawford, 2020).

ANT provides a valuable framework for analyzing the adoption of wearable rehabilitative devices in tele-rehabilitation by conceptualizing the interactions between human and non-human actors as part of a dynamic network. In this context, healthcare providers, patients, insurance companies, and the wearable devices themselves function as interconnected actors that shape the success and feasibility of tele-rehabilitation. Unlike traditional sociological approaches, ANT emphasizes how each actor, whether a person or an object, plays an active role in influencing

outcomes. For example, a wearable exoskeleton is not merely a passive tool but an actor that influences patient mobility, physician treatment plans, and insurance reimbursement policies.

Methods

To provide a thorough analysis of the research question, this paper uses various types of data sources and tools. The paper is split into three section as follows: to explore how health care providers play a role in tele-rehabilitation, this paper looks into provider statements to further gauge health care opinion on virtual rehabilitation options; to investigate insurance companies' influence on telehealth, this paper discusses healthcare infrastructure in rural regions and what coverages options for telehealth and wearables are available to patients; lastly, this paper uses interview-style research papers and feasibility studies to seek information regarding patient attitude towards wearable medical devices and tele-rehabilitative access in rural areas. Key terms associated with this paper include *tele-rehabilitation, wearable devices, prosthetics, rural, telehealth, virtual, rehabilitation*. It is important to consider the data as only part of the answer to the research question: How does the relationship between healthcare providers, private and public healthcare policies, and patients influence the adoption of wearable devices into tele-rehabilitation? The following Results and Discussion section details these findings.

Results and Discussion

The integration of wearable devices into a virtual environment has the potential to significantly enhance patient care, particularly in rural communities where access to specialized rehabilitation services is limited. This research explores the perspectives of healthcare providers, patients, and insurance companies to understand the challenges and opportunities with this relatively novel concept. Interviews with orthotists and prosthetists highlight the necessity of

provider engagement and patient willingness in the successful implementation of telehealth solutions. Additionally, patient attitudes towards tele-rehabilitation, particularly among stroke survivors, demonstrate both interest and hesitation due to technological, financial, and accessibility barriers. Furthermore, an analysis of insurance policies reveals disparities in coverage, with both private and public insurers offering telehealth services while still posing financial obstacles for many patients. A more in-depth analysis of the results is given below.

The importance of healthcare provider's opinion in delivering quality tele-rehabilitation.

A 2024 study conducted interviews of 25 orthotists and prosthetists (O&P) and their perspective on the barriers and facilitators influencing the use of telehealth for orthotic/prosthetic services in the United States of America. Many practitioners in this study had a limited understanding of what telehealth was, which limited their ability to see its value, or engage with complex issues. Practitioners often used telehealth for simple initial consultations or follow-up appointments. They highlighted that basic adjustments to prosthetic devices patients have been wearing for years, such as adding a new prosthetic liner, was more favorable to do online versus physical therapy sessions for a new user (Dillon et al., 2024). Orthotists and prosthetists also noted that patients needed to be willing to engage in online instruction with their wearable device. If that enthusiasm did not exist, it would be difficult to get results (Dillon et al., 2024).

The Dillon et al. research study highlights the importance of a positive patient-practitioner relationship. In the interviews found in the study, most O&P specialists emphasized that employing genuine patient-focused attitudes led to better outcomes. The study found that practitioners who embraced the benefits of telehealth, rather than focusing on its limitations, were more likely to integrate wearable devices into remote care. These providers emphasized patient-centered approaches, allowing patients to have an agency in choosing telehealth options,

which improved engagement. Based on this study, the first step to getting quality telehealth is for patients to establish connections with their provider. In rural areas where traveling far distances for care is not feasible, developing these relationships in person is unrealistic. For rural communities to have access to specialized treatments, targeted education and training programs to help healthcare providers understand the capabilities of tele-rehabilitation and wearable technology must become more available.

Patient empowerment, on part of the healthcare provider, is key for the adoption of wearable medical devices in rural communities. This begins with provider involvement in the development of virtual rehabilitation programs. A 2022 paper by Kang et al. underscores the necessity of integrating healthcare providers into the design and implementation of wearable-based rehabilitation programs. When providers and practitioners have a say in what tele-rehabilitation looks like, they are more educated and informed about the concept. This could potentially lead to a more widespread adoption of wearables into the telehealth sphere (Kang et al., 2022). Providers will have the ability to educate their patients on wearables in both an in person and online setting, and rural communities can benefit.

The paper also acknowledges a critical challenge: some clinicians remain hesitant to engage with wearable technologies due to concerns over data accuracy. While such skepticism is understandable, dismissing wearables entirely may lead to missed opportunities for patient empowerment and improved outcomes. A more balanced approach, where providers support patients in using wearables while being mindful of data collection could mitigate skepticism. Furthermore, wearable devices offer tangible benefits to healthcare providers, particularly in rural settings where in-person consultations may be limited (Kang et al., 2022). The ability to collect real-time, objective patient data enables more personalized and timely care, allowing

clinicians to adjust treatment plans based on continuous monitoring rather than sporadic in-person visits. For rural patients, this implementation could help care become more accessible.

From an ANT lens, the relationship between healthcare providers and patients plays a crucial role in the successful adoption of wearable devices for tele-rehabilitation. Providers serve as both gatekeepers and facilitators, influencing patients' willingness to use wearables through their level of support and engagement. Based on the research mentioned above, providers are currently skeptical about physical therapy and tele-rehabilitation as a solution to in person sessions. Besides short visits, virtual care is held at arm's length. Reliable internet and education, as well as proper data privacy measures, is imperative for this novel concept to be a success. With proper education and training, providers will have the capacity to introduce and practice tele-rehabilitation with wearables in remote areas.

Patient attitude towards and willingness to accept tele-rehabilitation as a form of care.

Tele-rehabilitation offers several obvious benefits that significantly enhance physical therapy services, particularly in rural areas. Primarily, it facilitates access to specialized care by enabling remote consultations and therapy sessions, thereby reducing the need for patients to travel long distances. (Li, 2024). However, several logistical challenges arise when trying to implement tele-rehabilitation in rural communities. Most of these obstacles are technological, as poor internet connectivity in remote areas limits the reliability and functionality of tele-rehabilitation platforms. Another major obstacle is the lack of digital literacy among some patient populations, particularly the elderly, who may encounter difficulty using telehealth technologies (Li, 2024). Such issues lead to reduced engagement and negative patient attitudes towards the idea of tele-rehabilitation and adhere less to treatment plans.

Various studies in rural communities have yielded positive results in tele-rehabilitation's efficacy in overcoming geographical limitations and enhancing accessibility to physical therapy services. A paper by Temehy et al. complied studies from rural areas all over the world to investigate the impact of tele-rehabilitation on stroke survivors. The authors pulled various studies that included testimony from adult stoke patients who had been discharged from the hospital. Patients from this study lived in geographically sparse areas and noted tele-rehabilitation as a potential solution to address the shortage of physical therapy services (Temehy et al., 2022). While they did not receive virtual sessions themselves, they were open to the idea. Overall, it seems that, even though patients from the study did not know the full extent of what tele-rehabilitation involved, they were open to the idea of an online option to receive the same services they would in a specialized physical therapy center.

Analyzing a study by Tyagi et al from 2018 revealed that patients who participated in tele-rehabilitation programs had many positive things to say about it. The study involved semi-structured in-depth interviews and focus group discussions with patients in rural Asia. One of the most significant benefits noted at the patient level was affordability, as tele-rehabilitation presents a cost-effective alternative to traditional rehabilitation, particularly for lower-income individuals. Patients from the study also noted how tele-rehabilitation eliminated the need for travel, many of whom had to bear the burden of finding transportation to and from specialized facilities or worked nighttime shifts that prevented them from going to daytime appointments (Tyagi et al., 2018). This flexibility increased patient engagements because they could choose exercise timings that fit their personal schedules, making it more adaptable to diverse lifestyles. Concurrently at the provider level, tele-rehabilitation helps physical therapists provide care in the interim when patients are figuring out how to go to in-person rehab centers (Tyagi et al., 2018).

Additionally, a provider interviewed in the study noted that tele-rehabilitation helped detect health issues like hypertension early, highlighting its potential for preventive care.

However, patients also faced multiple barriers while participating in tele-rehabilitation programs. Many participants described difficulties related to setting up the equipment and the lack of clear instructions (Tyagi et al., 2018). The limited scope of exercises was also cited as a concern, with some patients and caregivers perceiving the limited set of exercises that can be done virtually as repetitive or insufficient for comprehensive rehabilitation. From a provider perspective, virtual assessments pose significant challenges due to the inability to physically examine patients, affecting the accuracy of evaluations. Additionally, interface-related issues, such as small screen sizes and complex data presentation, may discourage therapists from engaging with tele-rehabilitation platforms. Beyond technological barriers, patient characteristics such as age, disability level, cultural influences, and sensory impairments, significantly impact tele-rehabilitation engagement. Older adults, patients with severe disabilities, and individuals with reliance on in-person caregivers often struggle to integrate virtual sessions into their routines (Tyagi et al., 2018). The study underscores the multifaceted nature of adopting wearables into tele-rehabilitation.

Patient acceptance is crucial to making the adoption of wearable medical devices into tele-rehabilitation successful. Particularly in rural communities, patients rely heavily on their families for day-to-day activities, and introducing virtual care into their lives will involve working with this support system to make tele-rehabilitation smoother for the patient. In addition, as stated in the previous section, a strong provider-patient relationship is crucial to adopting virtual health platforms. While it offers numerous advantages, successful implementation of telehealth requires addressing technological, cultural, and patient-specific

challenges to optimize its effectiveness. Ultimately, while tele-rehabilitation is not a one-size-fits-all solution, its integration into healthcare - when adapted to patient needs - can significantly improve rehabilitation outcomes. Thinking about the situation from an ANT perspective, and prioritizing the relationships patients have with their communities and caregivers, can bridge existing care gaps and provide a smoother integration of wearables in telehealth in rural area not only in the United States but across the world.

The influence of insurance policies on the adoption of wearables into tele-rehabilitation.

To investigate how insurance policies affect the adoption of wearables into tele-rehabilitation, this paper first explores the most popular health care providers in rural areas. Regional health insurance providers in rural America are increasingly recognizing the importance of tele-rehabilitation, virtual health consultations, and coverage for wearable medical devices such as prosthetics. These services are vital in overcoming geographic barriers and enhancing healthcare accessibility for rural populations. For instance, Blue Cross Blue Shield of Alabama offers telehealth coverage that includes virtual visits with healthcare providers, facilitating access to medical care without the need for extensive travel (*Find out*, 2024). Similarly, Montana Health Co-op provides coverage for tele-rehabilitation services, enabling patients to receive physical therapy remotely (*Mountain Health CO-OP – Health Insurance*, 2025). Regarding wearable devices, many regional insurers cover prosthetics when deemed medically necessary, although coverage specifics vary based on individual policies.

In terms of public insurance policies, Medicare and Medicaid have expanded their coverage to include various forms of telehealth services, including tele-rehabilitation, in response to the growing demand for remote healthcare solutions post-COVID. Medicare Part B covers telehealth services such as physical and occupational therapy sessions conducted via

telecommunications technology, allowing beneficiaries to receive care without traveling to a healthcare facility. Medicare Part B also covers prosthetic devices needed to replace a body part or function when prescribed by a Medicare-enrolled physician These services are reimbursed at rates comparable to in-person visits, ensuring equitable access to care (LeValley, 2025). Medicaid's coverage of tele-rehabilitation and virtual health services varies by state, as each state determines its own policies regarding telehealth. Generally, Medicaid recognizes telehealth to deliver healthcare services, including rehabilitation therapies. However, policies covering telehealth services – including tele-rehabilitation – were an expanded service for COVID-19 measures. These options have been extended until March 2025.

Based on the above information, it seems that private and public insurance organizations are offering plans that include options for specialized services like tele-rehabilitation. However, stroke patients referenced in the Temehy et al. paper faced significant financial challenges when trying to pay for their treatments. Poor support from their insurance providers deterred many patients from wanting to follow through with virtual care with their rehabilitative devices. Many of them opted to travel long distances because it was cheaper than relying on regional insurance companies (Temehy et al., 2022). Providers also cite the lack of good payment options as a barrier to providing tele-rehabilitation services. Differences in payment models and liability coverage that a provider versus the patient is enrolled leads to complications when determining what services and devices are covered (Tenforde et al., 2017).

While both private and public insurers have recognized the growing need for virtual healthcare solutions, non-human actors from ANT, such as financial barriers, remain a significant challenge for many patients. High rehabilitation costs, coupled with inconsistencies in insurance coverage, often discourage patients from utilizing their wearable medical devices with

virtual care options. This not only affects patients but also providers, who face challenges navigating different private and public options. A stable and supportive insurance system is essential for ensuring that patients receive the care they need without financial hardship. Access to comprehensive insurance programs could provide the necessary financial security for individuals in tele-rehabilitation programs, enabling them to focus on their rehabilitation rather than the burden of medical or travel expenses. The sentiment expressed in the Temehy et al. study emphasizes the critical role of insurance in creating a stable community for stroke survivors, as well as other patients who use wearables. Strengthening financial support systems would not only improve individual recovery outcomes but also contribute to broader acceptance of wearables in a virtual environment.

Limitations and Future Work

One of the primary limitations of this research is the availability and scope of existing studies on tele-rehabilitation and wearable medical devices in rural communities. The concept of telehealth is relatively new, gaining popularity during the wake of COVID-19. Additionally, much of the research relies on qualitative data, such as interviews and self-reported patient experiences, which, while valuable, may not fully capture the complexities tele-rehabilitation with wearables. More data-driven studies need to be conducted so that a quantitative conclusion on the adoption and effectiveness of wearables in a virtual environment can be made. Another limitation is the variability technological infrastructure in rural areas – internet access and digital literacy – is constantly evolving, meaning that current findings may not reflect future conditions.

Future research should aim to address long-term impact of tele-rehabilitation and wearable technology on patient outcomes. This paper primarily used three human actors within the ANT framework to analyze finding and draw conclusions. Other groups of researchers

should focus on how non-human actors such as the internet, computers, etc. affect the adoption of wearables in tele-rehabilitation. Additionally, interdisciplinary collaborations between healthcare professionals, engineers, and policymakers could lead to the development of improved tele-rehabilitation platforms that better integrate wearables into remote patient care.

Conclusion

Treating healthcare providers, patients, and insurance providers as human actors in a giant network, this paper aimed to investigate the way in which they interacted to shape the integration of wearable devices into tele-rehabilitation. This research highlights that healthcare providers play a crucial role in facilitating the use of tele-rehabilitation, as their knowledge, attitudes, and willingness to integrate wearables directly affect patient adoption. Patients, in turn, must be willing and able to engage with these technologies, but their acceptance is often shaped by the level of provider support and the accessibility of telehealth services. A solid patient-provider relationship is key. Insurance policies, both public and private, serve as gatekeepers by determining the financial feasibility of tele-rehabilitation and wearable device adoption. Both patients and providers are less likely to participate if plans are not affordable and consistent. This research underscores the broader significance of improving provider education, strengthening insurance policies, and enhancing patient accessibility to ensure that wearable devices are effectively integrated into tele-rehabilitation programs.

Bibliography

Akinlotan, M., Primm, K., Khodakarami, N., Bolin, J., & Ferdinand, A. (2021). Rural-Urban Variations in Travel Burdens for Care: Findings From the 2017 National Household Travel Survey (Policy Brief) [Review of *Rural-Urban Variations in Travel Burdens for Care: Findings From the 2017 National Household Travel Survey (Policy Brief)*]. In *https://www.ruralhealthresearch.org/publications/1441*. Southwest Rural Health Research Center.

Barbourville ARH offers new Telestroke and Teleneurology Services to Stroke Patients - May 28, 2021 - Appalachian Regional Healthcare. (2021, July 30). Appalachian Regional Healthcare. https://www.arh.org/newsfeed/barbourville-arh-offers-new-telestroke-and teleneurology-services-to-stroke-patients

Catalán, J. M., García-Pérez, J. V., Blanco, A., Ezquerro, S., Garrote, A., Costa, T., Bertomeu Motos, A., Díaz, I., & García-Aracil, N. (2021). Tele-Rehabilitation Versus Local Rehabilitation Therapies Assisted by Robotic Devices: A Pilot Study with Patients. Applied Sciences, 11(14), 6259. https://doi.org/10.3390/app11146259

Crawford, T. H. (2020). Actor-Network Theory. *Oxford Research Encyclopedia of Literature*. https://doi.org/10.1093/acrefore/9780190201098.013.965

Dillon, M., Ridgewell, E., Clarke, L., Bishop, K., & Kumar, S. (2024). Exploration of the barriers and facilitators influencing use of telehealth for orthotic/prosthetic services in the United States of America: An orthotist/prosthetists perspective. PLoS ONE, 19(10), e0309194–e0309194. https://doi.org/10.1371/journal.pone.0309194

Does Insurance Cover Prosthetics? | PrimeCare. (n.d.). Primecareprosthetics.com. https://primecareprosthetics.com/blog/are-prosthetics-covered-by-insurance

Find out if you qualify for Alabama health insurance today - Individuals - Liferay. (2024). Individuals. https://www.bcbsal.org/sales/web/individuals/health

Kang, H. S., & Exworthy, M. (2022). Wearing the Future—Wearables to Empower Users to Take Greater Responsibility for Their Health and Care: Scoping Review. *JMIR MHealth and UHealth*, *10*(7). https://doi.org/10.2196/35684

LeValley, D. (2025, January 27). *Expanded Medicare Telehealth Services Available for an Additional Six Months*. Kiplinger.com; Kiplinger. https://www.kiplinger.com/retirement/medicare/medicare-telehealth-expanded-in-2025

Li, M. (2024). The Impact of Telerehabilitation on Physical Therapy Services in Rural Communities. *Journal of Novel Physiotherapy and Rehabilitation*, *8*(1), 014–016. https://doi.org/10.29328/journal.jnpr.1001058

Matsumoto, M. E., Wilske, G. C., & Tapia, R. (2021). Innovative Approaches to Delivering Telehealth. *Physical Medicine and Rehabilitation Clinics of North America*, *32*(2), 451–465. https://doi.org/10.1016/j.pmr.2020.12.008

Mountain Health CO-OP – Health Insurance. (2025). Mountainhealth.coop. https://mountainhealth.coop/

Mseke, E. P., Jessup, B., & Barnett, T. (2024). Impact of distance and/or travel time on healthcare service access in rural and remote areas: A scoping review. *Journal of Transport & Health*, *37*(37), 101819–101819. https://doi.org/10.1016/j.jth.2024.101819

Physical Therapy Statistics. (2024). Mastermindbehavior.com. https://www.mastermindbehavior.com/post/physical-therapy-statistics

Sun, X., Ding, J., Dong, Y., Ma, X., Wang, R., Jin, K., Zhang, H., & Zhang, Y. (2022). A Survey of Technologies Facilitating Home and Community-Based Stroke Rehabilitation. International Journal of Human–Computer Interaction, 39(5), 1016–1042. https://doi.org/10.1080/10447318.2022.2050545

Telehealth | CMS. (n.d.). Www.cms.gov. https://www.cms.gov/medicare/coverage/telehealth

Temehy, B., Rosewilliam, S., Alvey, G., & Soundy, A. (2022). Exploring Stroke Patients' Needs after Discharge from Rehabilitation Centres: Meta-Ethnography. *Behavioral Sciences*, *12*(10), 404. https://doi.org/10.3390/bs12100404

Tenforde, A. S., Hefner, J. E., Kodish-Wachs, J. E., Iaccarino, M. A., & Paganoni, S. (2017). Telehealth in Physical Medicine and Rehabilitation: A Narrative Review. *PM&R*, *9*(5), S51–S58. https://doi.org/10.1016/j.pmrj.2017.02.013

Tyagi, S., Lim, D. S. Y., Ho, W. H. H., Koh, Y. Q., Cai, V., Koh, G. C. H., & Legido-Quigley, H. (2018). Acceptance of Tele-Rehabilitation by Stroke Patients: Perceived Barriers and Facilitators. *Archives of Physical Medicine and Rehabilitation*, *99*(12), 2472-2477.e2. https://doi.org/10.1016/j.apmr.2018.04.033