Research Article

New American Journal of Medicine

A status report from the American Academy of Sleep Medicine discussing the use of telemedicine in the diagnosis and treatment of sleep disorders

Qurratul Afifa Shamim-Uzzaman

Sleep Disorders Center, Department of Neurology, University of Michigan, Ann Arbor, Michigan.

Corresponding author:
Qurratul Afifa Shamim-Uzzaman,
Sleep Disorders Center, Department of Neurology, University of Michigan, Ann Arbor, Michigan.

Received Date: 01 April 2024
Accepted Date: 16 April 2024
Published Date: 22 April 2024

Citation:
Qurratul Afifa Shamim-Uzzaman. A status report from the American Academy of Sleep Medicine discussing the use of telemedicine in the diagnosis and treatment of sleep disorders. New American Journal of Medicine 2024.

1. Abstract:

Telemedicine has become widely used as a result of the COVID-19 epidemic, which has brought attention to its significance in promoting sleep health and expanding access to sleep care. The American Academy of Sleep Medicine's 2015 position paper on the use of telemedicine for the diagnosis and treatment of sleep disorders is expanded upon in this update, which takes into account the lessons learned from such broad telehealth utilisation. An emphasis on value and quality, safety and privacy, health advocacy through sleep telemedicine, and future directions are important critical considerations in this edition.

2. Background:

Since the American Academy of Sleep Medicine released a position paper in 2015 about the use of telemedicine for the diagnosis and treatment of sleep disorders, the field of telemedicine has expanded rapidly [1]. The shift was first driven by the growing need for access to specialised treatment and developing technologies, but the novel severe acute respiratory syndrome coronavirus (SARS-CoV-2) was ultimately responsible for the widespread use of telemedicine. The COVID-19 pandemic put conventional approaches to providing healthcare in jeopardy as hospitals reduced non-emergent care and tried to provide the safest possible settings for patient care [2,3].

In 2020, the Centres for Medicare & Medicaid Services waived their reimbursement restrictions, easing the process of offering telehealth services. This was done by the US Department of Health and Human Services. Patients can now receive care anywhere, from the privacy and comfort of their own homes to public spaces, thanks to innovative platforms. Conventional center-to-home models were extended to incorporate the provider's absence from the centre in addition to the patient's. The AASM Board of Directors reviewed and updated the 2015 document in response. In May 2020, a study of the current literature, materials, and policies was started by the Telemedicine Presidential Committee. The group's initial conclusion was that the recommendations made in the original 2015 document were still applicable and ought to be used as a basis for future decisions.

Clinical care requirements for telemedicine services should be the same as those for in-person appointments, covering all facets of diagnosis and treatment choices that one could reasonably anticipate from a regular office setting. When deciding the breadth and depth of telemedicine applications in the diagnosis and treatment of individual patients and sleep disorders, clinical judgement should be used. If applied in accordance with the guidelines in this document, live interactive telemedicine for sleep disorders ought should be acknowledged and compensated in a way that is competitive with or equivalent to conventional in-person consultations.

3. Further Guidelines for Telemedicine Applications in Sleep Medicine:

Telehealth modalities, which are not geographically restricted, can offer complete, high-quality sleep therapy. If synchronous telehealth visits adhere to all licencing, state, federal, and HIPAA regulations for both the originating and distant sites—even if both sites are located outside of the traditional office—and replicate the live in-person office visits in terms of quality and process, they may be used in place of live in-person visits. Asynchronous telehealth technologies can improve access to sleep medicine services and clinical care.A telemedicine programme needs to uphold a culture of good patient safety that includes professional responsibility, risk assessment, risk management, and infection control. It also needs to give special attention to the patient's physical and mental well-being throughout the telemedicine visit. In order to lessen health inequities, campaigning for increased access to telehealth systems is necessary, even if telehealth may be essential for maintaining the continuity of sleep health. The optimal approach to combine in-person care with telemedicine going ahead will require clinical routes for the diagnosis and treatment of sleep problems, including the integration of

data from consumer-based and sleep-specific technologies.

3.1. Technology-Based Care:

The delivery of sleep care via telemedicine modalities can take place synchronously or asynchronously, as explained in the 2015 position paper [1]. Synchronous telemedicine services must replicate in real time in-person office visits, involving audio and visual contacts between a patient at the originating site and a physician at the distant site. In the telemedicine interaction, additional staff members, carers, and providers may be included, as is customary in a typical office visit. During a telemedicine visit, a tele-presenter may be introduced to help with the technology and inspection at the original site.Asynchronous telemedicine services involve electronic communications between patients and providers, electronic consultations between providers, remote interpretation of store-and-forward systems, and self-directed care mechanisms like data from health apps. These services occur when the patient and provider are separated not only by distance but also by time. The 2015 position paper contains more information.

3.2. Synchronous telemedicine service updates:

Fully out-of-center models may also offer comprehensive care, provided that they replicate in real time office visits, in addition to the center-to-center and center-to-home models, which place the patient at home or at another centre and the clinician at the medical institution. Out-of-center models can take place in any private, secure location that the patient and physician choose, and they include both the originating and remote sites outside of the traditional office. Multimedia communications technology that allows for real-time, two-way interactive audio and video communication is one method that these interactions can be carried out. Examples include conventional laptops and desktop computers as well as tablets and smartphones. In order to comply with the Health Insurance Portability and Accountability Act (HIPAA) and other state and federal requirements, privacy and interaction quality should be guaranteed in any mobile communication technology. Patients need to be made aware that the telehealth encounter is a substitute for the in-person, live office visit. In the event that an emergency is detected during the telemedicine consultation, patient safety should be guaranteed, and protocols for calling emergency services (such as e-911) should be in place. It is advisable to create a backup plan ahead of time in case of low signal quality or connectivity issues. At every visit, consent for synchronous care via a telehealth medium should also be acquired.

3.3. Asynchronous Telemedicine Service Updates:

In sleep medicine, store-and-forward technologies are now commonly utilised. Examples of store-and-forward technologies frequently used in the treatment of patients receiving sleep medicine include communications via patient portals, remote patient monitoring that includes review of data obtained remotely from a positive airway pressure device, and remote interpretation of home sleep apnea tests. Asynchronous telemedicine services include electronic consultations that involve reviewing medical data and communicating clinical decisions to referring providers, electronic patient communications, and virtual patient check-ins via electronic health record platforms. Asynchronous services require patient approval, just like synchronous telemedicine does. approval for asynchronous treatment should be sought on an annual basis at minimum. More asynchronous telemedicine services are now covered by insurance due to the COVID-19 regulation; nevertheless, in order to guarantee continued payment for these services, providers need communicate with payers on a regular basis.

4. Advocacy:

The COVID-19 epidemic has demonstrated the potential of telemedicine to offer patients with sleep disorders full care, and sleep medicine has established itself as a specialty capable of providing thorough and high-quality care from a distance. In times of national emergency or natural disaster, telemedicine makes sleep treatment more accessible to vulnerable groups, people living in remote and underdeveloped locations, and everyone else. The elderly, kids, people from poorer socioeconomic backgrounds, patients at high risk of immunocompromised or drowsy conditions, people with physical or mental disabilities, and anyone without a safe way to get to or from doctor's appointments are vulnerable groups that may benefit from telehealth services.Indeed, telehealth has the potential to mitigate certain health inequalities and disparities linked to the conventional health care paradigm. Nonetheless, there is now a pronounced digital gap depending on socioeconomic and geographic variables,21 and the provision of telehealth care is heavily reliant on having access to broadband and high-speed internet. It is critical to recognise and address factors that have the potential to exacerbate health disparities, particularly in extremely remote areas with poor internet access and high poverty/low-income areas where access to smart electronics and the internet is expensive. State licencing laws have also created disparities in access to specialised knowledge by acting as major obstacles to the widespread use of telemedicine. State laws govern medical licencing, and while some jurisdictions permit cross-border medical care, others do not. Both the states where the provider practices (remote site) and the states where the patients reside at the time of the telehealth encounter (originating site) require the provider to hold a licence. Interstate Medical Licensure Compacts19 may speed up and simplify the process of obtaining a medical licence between states, but multistate licencing can still be costly and time-consuming.

These policies establish needless restrictions that hinder access in the era of telemedicine, when geographic distance is no longer a barrier to care. While many state licensure requirements were suspended during the COVID-19 pandemic, enabling healthcare providers to treat patients regardless of the patient's or provider's location, these suspensions must end, or new regulations allowing cross-border care must be put in place, as is the case with the Department of Veterans' Affairs. Without creating new health disparities or escalating preexisting ones, we must keep advancing in order to deliver safe, compassionate, and possibly cost-effective quality treatment using telehealth modalities. The expansion of telehealth must be accompanied by increasing access to high-speed internet and improved

connectivity. While telehealth may be essential to maintaining the continuity of sleep health, in order to lessen health inequities, we must push for increased access to telehealth networks.

5. Future Directions:

Examining the effectiveness of telemedicine in comparison to conventional in-person forms of care is an important field of research. Telemedicine is undoubtedly a practical means of providing care, but we still need to assess how clinical results stack up against face-to-face consultations. Proof of equivalency or noninferiority is required. Additionally, as telemedicine eliminates obstacles like physical space and many simultaneous patient check-ins, novel models of care, such shared medical sessions, may be carried out more readily. The majority of the discourse surrounding the use of telemedicine to treat sleep disorders has centred on the remote diagnosis and treatment of patients suffering from sleep apnea. In order to develop suggested processes and templates for diagnosing and treating additional common sleep disorders, such as insomnia, narcolepsy, parasomnias, restless legs syndrome, and circadian rhythm sleep-wake disorders, the next step is to examine them. It will be crucial to identify the components of a sleep disorder that require in-person care and those that can be evaluated remotely. Telemedicine can offer more alternatives for synchronous or asynchronous patient interaction if these components are identified. One way to compare telemedicine with in-person visits would be to use the quality metrics for sleep disorders that the American Academy of Sleep Medicine published in 2015. Patients are already using consumer sleep technology like wearables and smartphone apps extensively, and the massive amounts of data produced by medical equipment and consumer wearables could help with the development of algorithms for remote patient monitoring. As new technologies are developed, further investigation is required to assess not only their validity but also their influence on sleep behaviours and possible application in patient sleep care.

6. Disclosure Statement:

The American Academy of Sleep Medicine provided funding for the development of this work. Dr. Won is a member of the board of directors of the Society of Sleep and Anaesthesia. Dr. Jain is a member of the Board of Directors of the Association of Registered Polysomnographic Technologists. The involvement of Drs. Won and Jain does not imply support by the separate boards of directors of the organisations on which they sit. AIM Specialty Health, eviCore Healthcare, Somnoware, and the American Academy of Sleep Medicine all use Dr Epstein as a consultant. Dr. Trotti is a member of the Board of Directors of AASM. Conflicts of interest are not disclosed by the other writers.

References

1. Singh J, Badr MS, Diebert W, et al.. American Academy of Sleep Medicine (AASM) position paper for the use of telemedicine for the diagnosis and treatment of sleep disorders. J Clin Sleep Med. 2015;11(10):1187–1198. https://doi.org/10.5664/jcsm.5098
2. Wosik J, Fudim M, Cameron B, et al.. Telehealth transformation: COVID-19 and the rise of virtual care. J Am Med Inform Assoc. 2020;27(6):957–962. https://doi.org/10.1093/jamia/ocaa067
3. Mann DM, Chen J, Chunara R, Testa PA, Nov O. COVID-19 transforms health care through telemedicine: evidence from the field. J Am Med Inform Assoc. 2020;27(7):1132–1135. https://doi.org/10.1093/jamia/ocaa072
4. Fields BG, Behari PP, McCloskey S, et al.. Remote ambulatory management of veterans with obstructive sleep apnea. Sleep. 2016;39(3):501–509. https://doi.org/10.5665/sleep.5514
5. Schutte-Rodin S. Telehealth, telemedicine, and obstructive sleep apnea. Sleep Med Clin. 2020;15(3):359–375. https://doi.org/10.1016/j.jsmc.2020.05.003
6. Bruyneel M. Telemedicine in the diagnosis and treatment of sleep apnoea. Eur Respir Rev. 2019;28(151):180093. https://doi.org/10.1183/16000617.0093-2018
7. Lugo VM, Garmendia O, Suarez-Girón M, et al.. Comprehensive management of obstructive sleep apnea by telemedicine: Clinical improvement and cost-effectiveness of a Virtual Sleep Unit. A randomized controlled trial. PLoS One. 2019;14(10):e0224069. https://doi.org/10.1371/journal.pone.0224069
8. Sparrow D, Aloia M, DeMolles DA, Gottlieb DJ. A telemedicine intervention to improve adherence to continuous positive airway pressure: a randomised controlled trial. Thorax. 2010;65(12):1061–1066. https://doi.org/10.1136/thx.2009.133215
9. Hwang D, Chang JW, Benjafield AV, et al.. Effect of telemedicine education and telemonitoring on continuous positive airway pressure adherence: the tele-OSA randomized trial. Am J Respir Crit Care Med. 2018;197(1):117–126. https://doi.org/10.1164/rccm.201703-0582OC
10. Murase K, Tanizawa K, Minami T, et al.. A randomized controlled trial of telemedicine for long-term sleep apnea continuous positive airway pressure management. Ann Am Thorac Soc. 2020;17(3):329–337. https://doi.org/10.1513/AnnalsATS.201907-494OC
11. Andersson G, Cuijpers P, Carlbring P, Riper H, Hedman E. Guided Internet-based vs. face-to-face cognitive behavior therapy for psychiatric and somatic disorders: a systematic review and meta-analysis. World Psychiatry. 2014;13(3):288–295. https://doi.org/10.1002/wps.20151
12. Lichstein KL, Scogin F, Thomas SJ, DiNapoli EA, Dillon HR, McFadden A. Telehealth cognitive behavior therapy for co-occurring insomnia and depression symptoms in older adults. J Clin Psychol. 2013;69(10):1056–1065. https://doi.org/10.1002/jclp.22030
13. Gieselmann A, Pietrowsky R. The effects of brief chat-based and face-to-face psychotherapy for insomnia: a randomized waiting list controlled trial. Sleep Med. 2019;61:63–72. https://doi.org/10.1016/j.sleep.2019.03.024
14. Seyffert M, Lagisetty P, Landgraf J, et al.. Internet-delivered cognitive behavioral therapy to treat insomnia: a systematic review and meta-analysis. PLoS One. 2016;11(2):e0149139. https://doi.org/10.1371/journal.pone.0149139

15. Paruthi S. Telemedicine in pediatric sleep. Sleep Med Clin. 2020;15(3S):e1–e7. https://doi.org/10.1016/j.jsmc.2020.07.003
16. Mileski M, Kruse CS, Catalani J, Haderer T. Adopting telemedicine for the self-management of hypertension: systematic review. JMIR Med Inform. 2017;5(4):e41. https://doi.org/10.2196/medinform.6603
17. Hanlon P, Daines L, Campbell C, McKinstry B, Weller D, Pinnock H. Telehealth interventions to support self-management of long-term conditions: A systematic metareview of diabetes, heart failure, asthma, chronic obstructive pulmonary disease, and cancer. J Med Internet Res. 2017;19(5):e172. https://doi.org/10.2196/jmir.6688
18. US Department of Health & Human Services. Policy changes during COVID-19. https://telehealth.hhs.gov/providers/policy-changes-during-the-covid-19-public-health-emergency/#incorporating-newly-allowed-technology-due-to-hipaa-flexibility. Accessed January 7, 2021.
19. Interstate Medical Licensure Compact Commission. Interstate Medical Licensure Compact. https://www.imlcc.org/. Accessed January 7, 2021.
20. Guise V, Anderson J, Wiig S. Patient safety risks associated with telecare: a systematic review and narrative synthesis of the literature. BMC Health Serv Res. 2014;14(1):588. https://doi.org/10.1186/s12913-014-0588-z
21. National Telecommunications and Information Administration. The State of the Urban/Rural Digital Divide. https://www.ntia.doc.gov/print/blog/2016/state-urbanrural-digital-divide. Published 2016. Accessed January 7, 2021.
22. American Academy of Sleep Medicine. Quality Measures. https://aasm.org/clinical-resources/practice-standards/quality-measures/. Accessed January 7, 2021.