TELE-SLEEP MEDICINE: AN OPPORTUNITY IN A CRISIS

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Abstract
The countrywide lockdown in India has necessitated healthcare providers consider alternate options for providing care during the COVID-19 pandemic. While there has been a tremendous focus in coping with emergency and inpatient care for COVID-19 related illness, there is also an increasing need to address management of non-communicable disease. The pandemic and the associated lockdown have witnessed the onset or worsening of sleep disorders often related to changing lifestyle, including inactivity, fear of the disease, and generalised anxiety caused by the uncertainty of the future. We propose the term ‘Lockdown Sleep Syndrome’ to describe this grouping of signs and symptoms. The wide coverage and extensive use of smartphones and more importantly, the appropriately timed Telemedicine Practice Guidelines from the Government of India, have made telehealth an attractive option, particularly in specialities such as Sleep Medicine which involves minimal physical examination. The experience of restricting personal visits to the clinic and promoting teleconsultation during the initial fifty days of lockdown is described. It was observed that two thirds of consultations shifted to a telehealth platform, and this was effective in giving satisfactory care and valid prescriptions, including to those outside the city of Chennai. Telemedicine not only helped provide uncompromised care to existing patients but also helped in identifying and managing the onset of new sleep problems with a pattern of signs and symptoms which are described as “Lockdown Sleep Syndrome”.

Keywords: COVID-19; teleconsultation; telemedicine; telehealth; tele-sleep medicine; lockdown sleep syndrome; India

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The current COVID-19 pandemic and lockdown protocols have made healthcare systems explore various options to improve access and delivery. Telemedicine and telehealth services have been an accepted mode of healthcare delivery in many countries since the 1990s.1,2 In India, the National Telemedicine Taskforce was established by the Indian Ministry of Health and Family Welfare (MoH&FW) in 2005. However, implementation was challenging due to the lack of widespread acceptance and restrictions by state medical councils.3

India has been subject to a countrywide lockdown initiated on 24 March 2020 that was extended several times until 30 June 2020, which has forced people to remain indoors.4 While the primary concern during this period has been the diagnosis and treatment of COVID-19, it is essential to also address non-COVID emergencies and routine care of patients with chronic diseases. Unfortunately, many patients have not been able to seek medical attention as outpatient services, and elective surgery has been suspended. Procurement of medicine has also become difficult. Pharmacies, not regulated as stringently as in Western countries, are open for restricted periods of time, have limited supplies and may not refill prescriptions.

While India is considered a resource-limited, developing nation, the widespread connectivity and availability of smartphones and networks, even in remote parts of the country, makes it ideal for telemedicine solutions during this Pandemic when movement is restricted. The Government of India’s National Institution for Transforming India (NITI Aayog) programme (www.niti.gov.in), is a policy think tank of the Government of India. NITI has actively monitored and implemented programmes and initiatives for capacity building in various areas of potential growth, and worked with the Medical Council of India (MCI) to develop simplified telemedicine guidelines which were released in March 2020.5 The timing was fortuitous and facilitated the expansion and reach of services of primary care physicians and specialists to manage chronic non-communicable diseases (NCDs) in addition to COVID-19 and non-COVID emergencies.

This article brings attention to the increasing incidence of COVID-19-related sleep disorders and how telemedicine
solutions have effectively been used to diagnose and manage them. Clinical experience has shown that a host of factors have contributed to sleep disturbances in those who have not had them previously, including the state of apprehension and uncertainty, disturbed daily schedule, increased flexibility in daily routine, reduced physical activity, and latent worries concerning work or social domains. For those with pre-existing sleep disorders, lack of routine follow-up in addition to all the above factors may contribute significantly to poor control. This is being described as a ‘Lockdown Sleep Syndrome’ (LSS).

In India, sleep medicine, although under-recognised, is a rapidly evolving specialty. The first sleep centre in India, the Nithra Institute of Sleep Sciences was established in 2004, and has provided specialised care for various sleep problems for over 8,000 patients. Recent guidelines and promotion of telemedicine and other digital health services have helped the Institution to increase awareness and cater to the needs of a wider population during the COVID-19 Pandemic and associated lockdown issues. Social media platforms were used to create awareness of telehealth consultations. Patients who sought help via phone or email were sent a questionnaire for a detailed history and were given an appointment for teleconsultation. The patients were also advised to download the Nithra application (App) for their Android phone, which provides various sleep and diet-related tips, a sleep diary and an easier means of booking an appointment. Staff encouraged patients to accept teleconsultations, but for the few who preferred in-person consultations strict screening and infection control protocols were followed in the clinic. Although telehealth platforms are available, Skype™ and Whatsapp™ were preferred as these are widely used in India. The new Telemedicine Practice Guidelines explicitly state that prescriptions in an appropriate format, presented through Whatsapp™, are acceptable as this helps reaching a larger population. Patients were informed that the Institute’s preference was using two-way video consults for the initial visit and phone calls were acceptable for follow-up visits. Motivating patients to adhere to their treatment plan and lifestyle modifications and sending prescriptions was successfully achieved through digital consults.

In the first 50 days of lockdown from 24 March, 2020, 82 teleconsultations and 44 clinic visits took place. (Figure 1) Forty-three (34%) of the consultations were initial encounters for sleep complaints while the remaining were follow-up consultations. Twenty-five patients with insomnia who were earlier successfully treated in our clinic presented with recurrence of symptoms. Twelve patients with sleep apnoea who were on Positive Airway Pressure therapy (PAP) were worried due to concerns of virus aerosolisation with use of PAP machines based on information available in print and digital media and were re-assured during their follow up consultations. Compliance with treatment was encouraged and monitored through the usage information data recovered from the equipment. Time slots were scheduled, and effective interview and counselling could be done. Diet counselling was also provided by a clinical nutritionist when appropriate. Those requiring medicines were sent prescriptions in digital format as per the recommendations of the Telemedicine Practice Guidelines and the Medical Council of India. Patients expressed gratitude for being seen during the difficult situation when they could not travel to the clinic.

The institute usually conducts an average of 100 sleep studies per month in the form of home-based (Level III) and laboratory polysomnography (Level I). During this lockdown period, it was decided not to perform Level I studies or continuous positive airway pressure (CPAP) titrations in the laboratory. However, nine portable studies were performed

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**Figure 1.** Consultations during the lockdown period of 50 days (starting from 24 March, 2020).
based on requests from referring physicians for hospitalised patients in whom obstructive sleep apnoea was suspected.

Over the past month, not only was the Institute able to cater to the needs within the country but also to those residing in other countries. Five Indian nationals who were visiting family overseas were unable to return due to travel restrictions and requested teleconsultations. They were counselled and educated regarding sleep hygiene, relaxation techniques and circadian rhythm abnormalities. Their current medications were adjusted or they were prescribed over the counter medication due to restrictions on prescriptions from India being accepted overseas.

The sleep specialists working at Nithra were also able to benefit from use of the teleconsultation modality. The sleep specialists who were not in a position to come to the centre were able to conduct consultations from their residence, ensuring that patients did not miss their follow up appointments, effectively addressing any concerns they had.

Telemedicine services ensure safety for both patients and healthcare providers during this pandemic and may become a preferred model in the future, particularly for specialities such as Sleep Medicine that could effectively lend itself to this model. Our experience during the first fifty days of lockdown in India confirms that effective counselling and transmission of prescriptions when necessary can be achieved. The appropriate timing of the Telemedicine Practice Guidelines from the Government of India and Medical Council of India has been very beneficial to both patients and healthcare professionals.

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