Telemedicine in neurosurgery has a long history. As early as 1997, there was a report about the benefits and pitfalls of telemedicine. In areas where neurosurgical services were centralized, telemedicine was included in the guidelines for head injury management in the early 2000s. In the same period, even in countries with limited facilities, telemedicine was helpful for managing neurosurgical patients in a hospital network. In small countries, such as Slovenia and Albania, a nationwide telemedicine system was established to avoid unnecessary transfers to neurosurgical units. Telemedicine was also commonly used for outpatient visits. Most published papers were affiliated with Western institutions, but in 2016 there was a large positive experience in India about telemedicine-based postoperative outpatient care.

The COVID-19 pandemic changed the approach to telemedicine, and in many cases telemedicine has become a mandatory option to keep outpatient clinics working. In a recent review, the results of various studies showed that treatment with telemedicine was successful for over 99% of patients. Unfortunately, most of these studies were conducted in high-income countries, and the described web-based telemedicine systems fit the needs and economic characteristics of these countries. The solutions required to establish teleconsultation services were quite expensive and consequently not cost-effective in the setting of low- and middle-income countries (LMICs).

Kumar et al. presented the results of an anonymized telephone survey about the satisfaction levels of patients and caregivers who had been provided with audio and video teleconsultations through WhatsApp (Meta Inc.) during the COVID-19 pandemic. Free video consultation was most appreciated by patients and caregivers because it saves time, increases accessibility to healthcare services, and allows for better overall communication between the doctor and patient. Two items were particularly significant in this analysis: familiarity with smartphone use and level of schooling. Preference for an audio or video call was not influenced by patient age: there was a homogeneous distribution of satisfaction level by age. In addition, the longer duration of the video calls generated better overall satisfaction than the voice calls.

The authors found that WhatsApp was useful because it has a huge subscriber base in India (like in other LMICs), has free services, and provides end-to-end encryption of calls and chats. WhatsApp also allowed review of radiological images that were sent by patients as pictures, and neurosurgeons could send digital prescriptions. However, there are shortcomings to the utilization of the WhatsApp platform when compared to the standard teleconsultation platforms with respect to privacy (e.g., Health Insurance Portability and Accountability Act [HIPAA] compliance), security, and regulation of patient data. Furthermore, WhatsApp does not allow the integration of sensor-based health data. Despite these concerns, Kumar et al. reported an extremely positive experience using this platform for outpatient visits. In countries with limited facilities, we need to suggest systems that are free of costs, immediately applicable, and without technological resources or complex telemedicine software.

We quickly researched this topic on PubMed by using the following keywords: “Social media,” “Whatsapp,” and “Neurosurgery.” Only 8 significant results were found. All except 1 were retrospective studies and surveys promoted by the same group and spread through different social media platforms, including WhatsApp. The authors used this platform, as well as others such as WeChat, to reach as many potential respondents as possible. They praised this way of involving colleagues, remarking on its potential use within the neurosurgical community. In a preliminary study, Joshi et al. extended the use of the WhatsApp application from a purely intradepartmental, informal communication modality to a formal tertiary service for neurosurgical referrals. However, the authors reported some
concerns regarding the loss of imaging quality, potential privacy breaches, and user errors.

We know that the literature is often biased by the geographical areas of the authors. In a review of neurosurgical publications from 2015 to 2017, less than 5% of the published papers came from LMICs. Moreover, only 8% of randomized clinical studies are performed in these countries. Therefore, the practical application of guidelines based on high-quality published papers is limited in LMICs.

During the COVID-19 pandemic, the need to increase the use of telehealth and telemedicine was also seen as an opportunity in countries such as Bangladesh, Colombia, and India, but no specific low-cost device has been suggested until now. Smartphones and computers are widely available, and each day we are discovering that many activities of daily life can be based on remote web connections and unnecessary travel can be avoided. Similar to webinars, which became popular during the pandemic, we need to find the positive lesson: remote outpatient visits will remain possible in the future and all over the world because of the availability of low-cost devices and will allow easier connections between us and our patients and their families. We were unable to travel during the COVID-19 pandemic; in the future, we will not travel because it will no longer be necessary in many cases.

References

Disclosures
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