Guidelines in establishing telerehabilitation services for people with vision impairment

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Telerehabilitation is a viable option to provide continuum of rehabilitation intervention in situations like the ongoing pandemic. Presently, there is no policy guidelines to the minimum standard of telerehabilitation. This paper describes procedures for telerehabilitation for people with blindness and low vision from the evidence-based practices from a premier eye institute in South India. The suggested guidelines can help develop and replicate similar models of telerehabilitation to reach people in need in difficult situations like COVID 19 pandemic.

Key words: Guidelines, methods, service delivery, telerehabilitation

The COVID preventive measures mandate a contactless care approach to prevent community spread of this deadly virus,[1-3] thus posing challenges to rehabilitation care for people with disabilities. Prolonged delay to rehabilitation care can increase the risk of reduced quality of life. The worst affected are the children, especially those with multiple disabilities, as the much-needed continuity of therapeutic intervention is interrupted during the critical developmental period. This situation is alarming as failing to intervene early can lead to a range of negative consequences in the future.[4,5] The adverse impact of delay in intervention affects the children in their development. In addition, it has its direct effect on families, making them desperate to seek help and support in the care of their children. Telerehabilitation is one of the viable options explored in the disability sector to extend services remotely to maintain the continuum of care.[1,2]

Telerehabilitation refers to the delivery of rehabilitation services via information and communication technologies.[4] Clinically, this term encompasses a range of rehabilitation services that include assessment, monitoring, prevention, intervention, supervision, education, consultation, and counseling. Telerehabilitation is widespread for stroke, brain injury, joint replacement, or spinal cord injury.[6] The advances in technology and healthcare innovation have greatly expanded its usability in health care without the physical presence of a medical professional and a patient, which is also evident in vision rehabilitation. Though the adoption rate is slow and gradual, evidence suggests telerehabilitation as an accepted, practical, time-saving, and cost-saving alternative to traditional face-to-face consultations with a low-vision consultant at the center.[1,2]

The ongoing pandemic demands the integration of telerehabilitation in the healthcare system. Even after the pandemic emergency, telerehabilitation services may still be beneficial to reach out to the broader needy people to promote more innovative and inclusive rehabilitation communities worldwide.[7,8] Initiating telerehabilitation will be an endeavor that requires careful planning, well-trained staff, equipment, and technology to execute services, and a clear understanding of the pros and cons of the services. Presently, there are no policy guidelines on the core, fundamental, necessary standards of care to be offered through telerehabilitation to the needs of people with vision impairment. This paper describes procedures for telerehabilitation for people with blindness and low vision from the evidence-based practices from a premier eye institute in South India.[2] The suggested guidelines can

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help develop and replicate similar models of telerehabilitation to reach people in need in difficult situations like COVID 19 pandemic.

Beneficiaries: Remote care can benefit both people with vision impairment and their families. The ease of receiving services at home is the choice of convenience to the beneficiaries. The cost and time saved from visiting the center are the additional benefits of telerehabilitation. Furthermore, the involvement of family members in intervention can ensure the continuity of services in the home environment. Telerehabilitation is also beneficial for service providers such as medical and rehabilitation professionals because it leverages cross-referral for taking the expert opinion as needed for specific case management. This way, telerehabilitation increases the scope for immediately connecting the visually impaired for specialist consultation.

Approach to care: On a one-on-one basis, a single counselor/therapist or an interdisciplinary team can manage the services. Service delivery can be decided by considering factors such as the category of vision loss, the presence of additional disabilities, and the unique training requirement of the clients.

The one-on-one approach is more suitable for individuals with a single disability (blindness or low vision) who can follow the instructions and make independent decisions. In this approach, a single professional can directly connect with the beneficiary to provide intervention.

An interdisciplinary approach is suitable for those with vision loss and additional disabilities, requiring the competencies of multiple professionals in rehabilitation care, such as speech therapists, physiotherapists, and special educators. In this approach, professionals involved in care from the beginning jointly communicate, exchange ideas, and work together toward the rehabilitation goals of an individual.[9] The involvement of family members and centralized coordination of services is crucial in this approach.

Types of intervention: Telerehabilitation can certainly facilitate most rehabilitation components, ranging from counseling for psychological well-being to intervention for independent living remotely. However, telerehabilitation is limited to people who have previously completed their eye examination, and reports are available for further planning and management. Moreover, it is crucial to recommend direct consultation for certain services (e.g., low-vision examination) or combine telerehabilitation with periodical follow-up assessment (e.g., early intervention). In addition, the services meant exclusively for children require the compulsory involvement of family members in training, as highlighted in Table 1.

Training duration: The length of services delivered may vary between individuals based on factors such as complexity of impairment and related training requirements, individual capacity to learn, and support from family members [Table 2]. Additionally, technical issues such as internet connectivity and orienting the parents and family on technology may also contribute to adjusting the training duration. The recommended per-session teleconsultation is 20–30 min and not to exceed 45 min considering the fatigue and tiredness involved in handling the technology training from both service providers' and beneficiaries' points of view.

Table 1: Summary of telerehabilitation guidelines

	Component of services	Categories
1	Counseling for psychological well-being*	A, B
2	Computer training with assistive technology	A, B
3	Early Intervention such as vision, speech, physio and cognitive skills*	A, B
4	Vocational training	C
5	Digital library for accessible books	A, B
6	Braille training*	B
7	Visual skills training*	B
8	Training to use Low-vision devices*	B
9	Home management skills	B
10	Orientation & mobility training*	B
11	Low-vision assessment*	C
12	Helpline services	A, B
13	Smartphone accessibility training	A, B
14	Web accessibility training	A, B
15	Abacus/Taylor frame*	A, B
16	Advocacy initiatives (workshops, events)	A, B
17	Assistance on job placement	B

Category: A- Services that can be delivered through telerehabilitation. Category: B - Blended model of care. Telerehabilitation combined with in-person follow-up training at the center. Category: C - Services that cannot be delivered through telerehabilitation. *Mandatory areas for parental/caretakers involvement in training

Training Schedule: Like direct consultation, scheduling telerehabilitation appointments will help prevent unnecessary confusion and hectic situations in the virtual training room. Letting the clients understand the details of their service providers and scheduled time for intervention will help them reduce their anxiety and better prepare themselves to undertake the intervention. Children and the elderly may have sleep disturbance and medicinal effects; thus, their preference prioritizes fixing the schedule.

Use of Digital Technology: The option between audio and audio-cum-video technology is decided based on the unique service requirement. For example, services such as computer and smartphone training with assistive technology, digital library services for providing audiobooks, and helpline services for any information on the rehabilitation of people with vision impairment can be categorized and provided through voice calls. On the other hand, assessment to understand the current problem and plan therapeutic intervention such as physiotherapy, vision therapy, speech therapy, and special education can be done to provide individual support plan and evaluation of the outcome. The audio-cum-video facility is most helpful in such situations.

Selection of virtual platforms: With the increasing number of virtual conferencing, the options for voice/video hosting platforms are plenty in the market. The layout of some platforms may be too complicated to use by those who are not tech-savvy. The platform selection can be decided based on user-friendly platforms and paid versus free calling. The popular ones used in India are Zoom, Google Meet, Microsoft Teams, and even phone apps such as WhatsApp. As far as possible, using the open-source platform is recommended so

that affordability does not hinder the services, especially for people from lower socioeconomic status, and the benefits are uninterrupted.

Training areas: Whether a rehabilitation professional or beneficiaries, it is vital to appropriately train them on aspects, including the use of the digital medium, protocols for calls, and data management. Imparting technical skills to both the service providers and receivers is pivotal for using the digital medium with ease. This includes understanding the different options in voice/video calling platforms, resolving technical glitches, and delivering the services through high-quality output. Another essential component of training is understanding the protocols for voice/video calling, placement and alignment of the camera, connecting from a noise-free environment, and proper network connectivity. In addition, the rehabilitation professional needs adequate training on communication etiquette for addressing the beneficiaries during telerehabilitation.

Data Management and Analysis: Documenting service details is critical to evaluate the impact of pre versus post-intervention. Electronic medical records have the convenience of retrieving data; however, Excel format is also equally beneficial for future analysis to plan strategies.

Ethics aspects: Patient privacy is a fundamental part of any healthcare system. Maintaining the confidentiality of personal details and intervention is of utmost importance. Thus, limiting the access to client records to the central coordinator is advisable as they can liaise between the therapists and clients as per need. Consent from the beneficiaries upon their interest in telerehabilitation is vital before initiating services. This will help orient the clients and their family members on service methodology and use the data to create awareness and conduct research. Consent in the form of a recorded voice message or e-confirmation should be encouraged.

Support material: Documents demonstrating the intervention with pictures, illustrations, and shorter videos are beneficial to support the family members following the online training instructions. This guidance material will further continue intervention post the telerehabilitation sessions.

Prior Appointment: Ad hoc training may bring in confusion and frustrations due to time delay, connectivity issues, non-availability of therapists to take services at a specific time, and other such matters. Scheduling appointments in advance will help the service providers and beneficiaries prepare for the training sessions, thus improving the training efficacy.

Overall coordination: Assigning a coordinator to monitor and manage the telerehabilitation will ensure the effectiveness and smooth flow of services delivery. The coordinator is overall responsible for telerehabilitation, from the beginning to its completion. The essential role includes scheduling appointments, ensuring the training sessions are provided on time by therapists, monitoring the training quality, data management, and handling grievances raised by beneficiaries if any.

Basic requirements for setting up the services: Telerehabilitation has the potential of delivering comprehensive services, including psychological welfare, education, independent living, assistive devices, low-vision care, and early intervention. "One size fits all" is rarely a feasible approach; thus, individualized plans in consultation with family members are needed. There must be a minimum standard of care made available to all those in need. Therefore, setting up the telerehabilitation services requires focusing on three essential elements; infrastructure, human resources, and equipment based on primary, secondary, and tertiary levels of care [Table 3].

Availability of all categories of trained rehabilitation professionals under one umbrella at all levels is often limited. However, a model of cross-referral from clinicians to rehab consultants and vice versa can provide professional support in such situations. Therefore, it is necessary to have collaboration, cooperation, and communication between all professionals involved in the vision rehabilitation process and between workers at different levels.

Table 2: Recommended length of intervention

	Categories	Example of services
One – time	Intervention that requires one-time support (3 days-1 week)	A specific inquiry – wanting to know the scribe eligibility, Training to use Low vision devices
Short-term	Intervention that requires more training support (1-3 months)	Mobility training, Computer skills training, Educational skills training
Long-term	Intervention that requires longer training sessions (1-6 months or more)	Early intervention, Vocational skills training, etc.

Table 3: Requirements for setting up telerehabilitation services

Cost	Primary	Secondary	Tertiary
	Length of service limited to a single area, with 1-3 sessions by a single professional over phone (e.g., Counseling)	Length of service requires long term intervention (e.g., braille training) by a single professional	Length of service requires long term intervention by multiple therapists (e.g., early intervention)
Human resource	1 professional	1-3 professionals	Interdisciplinary team
Infrastructure	1 room, 100 SFT	1 room, 200 SFT	1 room, 300 SFT
Equipment	1 computer with internet connectivity	2-3 computers with internet connectivity	4 computers with internet connectivity
	Electronic medical records, common to all level		

The foreseen challenges of telerehabilitation may involve human and technical aspects. There are significant concerns from human elements, lack of motivation to receive service remotely, and apprehensions related to data privacy.

From technological aspects, internet connectivity and handling technology can be a problem to service delivery. However, such barriers are typical in any online service, which are tackled easily through proper planning.

With the revised approach to health, telerehabilitation needs to be an integral part of teleophthalmology. A blended model of telerehabilitation care, in which the services are provided in-clinic for the first, and the last visit with interim visits completed remotely, will help persons with vision impairment overcome the barriers to care through remote, internet-based consultation. The suggested guidelines can help develop and replicate similar models to reach people in need.

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Conflicts of interest

There are no conflicts of interest.

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