

Telerehab: Technology Meets Physio Care

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Telerehabilitation (Telerehab) refers to the use of digital communication technologies, such as computers and mobile devices, to access remote physiotherapy services and manage health care. These technologies can be used by patients from home or utilized by physiotherapists to enhance health care delivery.

For instance, consider how telerehab could support stroke recovery. Patients could use their mobile phone or other devices to upload health data such as food logs, medications, dosages, and blood pressure for remote review by a nurse, who provides feedback electronically. They might also watch instructional videos on managing blood pressure or download apps to track it. Based on their diet and health metrics, an app could help estimate daily salt intake. Online patient portals enable scheduling appointments, requesting home exercise plans, or emailing physiotherapists for advice. Additionally, patients can order medical supplies and medications online, while mobile gait analysis at the doctor's office could eliminate the need for specialized appointments. Reminders via email, text, or phone can alert patients when reassessments or preventive care, such as gait analysis, are due. The goals of telerehab, sometimes referred to as e-health or m-health (mobile health), include improving access to health care for individuals in rural or remote areas. Telerehab makes services more convenient for those with mobility challenges, time constraints, or limited transportation. It also enhances access to medical specialists, improves care coordination between patients and health care teams, and supports patient self-management. Numer-

ous telerehabilitation (telerehab) services offer significant benefits to patients. For example, many primary care clinics provide online patient portals that serve as secure alternatives to email, which is generally not recommended for sharing confidential medical information. These portals allow patients to communicate securely with their physiotherapists and manage various aspects of their care, such as reviewing summaries of previous visits, scheduling appointments, or requesting appointment reminders. If your doctor is part of a large health care system, the portal may also serve as a centralized communication platform for any specialists you see.(1)

Some clinics also offer virtual appointments, allowing you to consult with your doctor or a nurse via online video conferencing. These virtual consultations provide an effective way to continue receiving care from your regular physician when an in-person visit isn't necessary or feasible. Additionally, web-based "visits" with a doctor or nurse practitioner are available for minor ailments, much like the services offered by walk-in clinics. Larger companies may include virtual doctor visits as part of their health care plans. When you access these services, you're guided through a series of questions, after which a physiotherapist can prescribe medications, suggest home care strategies, or refer you for further medical care.

Physiotherapy call centers, staffed by trained professionals, provide another telerehab option. These centers use a question-and-answer format to offer advice on managing care at home. However, they do

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not diagnose illnesses or prescribe medications.(2)

While these services are highly convenient, they also have limitations. Virtual treatments may not be coordinated with your primary care provider, which means essential details from your medical history might not be considered. Furthermore, the reliance on computer-driven decision-making may not be ideal for those with complex medical needs. Without an in-person assessment, the accuracy of diagnosis could also be compromised. Additionally, virtual appointments may limit the opportunity for shared decision-making between you and your doctor, particularly when it comes to adjusting treatment plans if initial approaches are ineffective.

Several technologies allow physiotherapists or health care teams to monitor your health remotely. These include mobile apps or web-based platforms where you can upload health data, such as blood pressure readings, for review. Other tools, like wireless devices that transmit data on blood pressure, blood glucose, or lung function, can send real-time health information directly to your care team.(3)

Wearable devices offer the ability to automatically record and transmit important health data, such as heart rate, blood glucose levels, gait, posture control, tremors, physical activity, and sleep patterns. For older adults or individuals with dementia, home monitoring devices can track changes in daily routines, such as detecting falls.

Doctors also use technology to enhance patient care. For instance, virtual consultations allow primary care physicians to consult with physiotherapy specialists when they need additional input on a diagnosis or treatment plan. During this process, the community physiotherapist may send examination notes, medical history, test results, and imaging, such as X-rays, to the specialist for review. The specialist might then respond electronically, conduct a virtual appointment with the patient at the doctor's office, or request an in-person meeting. These virtual consultations can reduce unnecessary referrals to specialists, cut down on wait times, and eliminate the need for travel.

An electronic personal health record (PHR) system is another valuable tool that allows individuals to manage and maintain their own health information. A PHR app can be accessed at any time via a web-enabled device like a smartphone, tablet, or computer. In an emergency, a PHR can provide crucial information to medical personnel, such as current diagnoses, medi-

cations, allergies, and contact details for your physician. Many apps are available to help people organize their medical data in one secure place, enabling users to store health records, track vital signs, monitor caloric intake, schedule medication reminders, and record physical activity such as step counts.(4)

Technology holds great potential to improve the quality of health care, making it more efficient, better coordinated, and more accessible. Telerehabilitation can bring health services closer to home, increasing convenience and reducing barriers to care. Though research on telerehab is still in its early stages, it is expanding rapidly. For example, a 2016 study found that both telephone-based support and telemonitoring of vital signs for patients with heart failure reduced the risk of death and hospitalization while improving their quality of life.(5)

While telerehab can help coordinate care, there is also a risk of fragmented care, which can lead to gaps in treatment, overuse of medical services, misuse of medications, or unnecessary duplication of care. Additionally, access to telerehab services may be affected by factors such as the cost of services, insurance coverage, and regional internet access. Insurance reimbursement for telerehab services still varies by location and type of insurance, and those who might benefit the most from improved access to care could face limitations due to the availability of affordable technology and internet services.(1-5)

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