



Research & Study

Brief RS I 16

Barriers and levers to the use of tele-rehabilitation through experimentation in three countries

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2021



About the programme

The Luxembourg Framework Agreement aims (15 countries), to promote the access of people with disabilities to medico-social services and employment, in a multisectoral approach (prevention and health, functional rehabilitation, education and vocational training)

About this brief

A Humanity & Inclusion publication

About this study

This study was conducted with the support of the Ministry of Foreign and European Affairs of the Grand Duchy of Luxembourg



A. Background to the study

The development of Information and Communication Technologies (ICT), coupled with the increasing number of mobile phone and internet users worldwide, has enabled the emergence of digital health and telemedicine, of which tele-rehabilitation is a part. Tele-rehabilitation is defined as the use of ICT to provide rehabilitation services to people at a distance in their own environments. Humanité & Inclusion integrates the use of ICTs in several projects, such as the 3D orthotic manufacturing projects, the PARI project (Pour l'Accès aux services de Réadaptation dans les Îles en Haïti et à Madagascar), one of whose objectives was to implement connected rehabilitation, or the OpenTeleRehab project, which develops a rehabilitation application. During the pandemic (COVID-19), tele-rehabilitation was used in many projects to monitor beneficiaries, as in Colombia. Professionals and beneficiaries were able to experiment with tele-rehabilitation and rehabilitation applications in real-life situations, highlighting the difficulties and benefits of using these new devices.

From the experiments conducted in Haiti, Madagascar and Colombia, it is possible to identify the obstacles and levers to the use of tele-rehabilitation.

B. General and specific objectives

The objective of this study is to describe and analyse the obstacles and levers to the use of tele-rehabilitation and the use of rehabilitation applications in IH projects, at the level of professionals and beneficiaries. The specific objectives are:

1. to identify the difficulties and contributions of the use of rehabilitation applications for tele-rehabilitation in the care of beneficiaries
2. To identify the difficulties and benefits of using tele-rehabilitation for beneficiaries.
3. Identify the success factors, the conditions of failure in the implementation of these tools in the projects.

C. Methodology

As the level of deployment of tele-rehabilitation is different in the three countries included in this study, a mixed approach, using interviews and questionnaires, was implemented to allow the collection of data from professionals and beneficiaries.

- Questionnaires were created and disseminated to collect the views of beneficiaries and professionals who had experienced tele-rehabilitation.
- Individual and group interviews were conducted with:
 - Professionals trained in the use of the application but who were unable to implement tele-rehabilitation with beneficiaries.
 - The project leaders from each country.

The results obtained were analysed according to human factors (knowledge, adherence, etc.), technological factors (internet, support, etc.) and organisational factors (business model, data protection, etc.)

D. Results

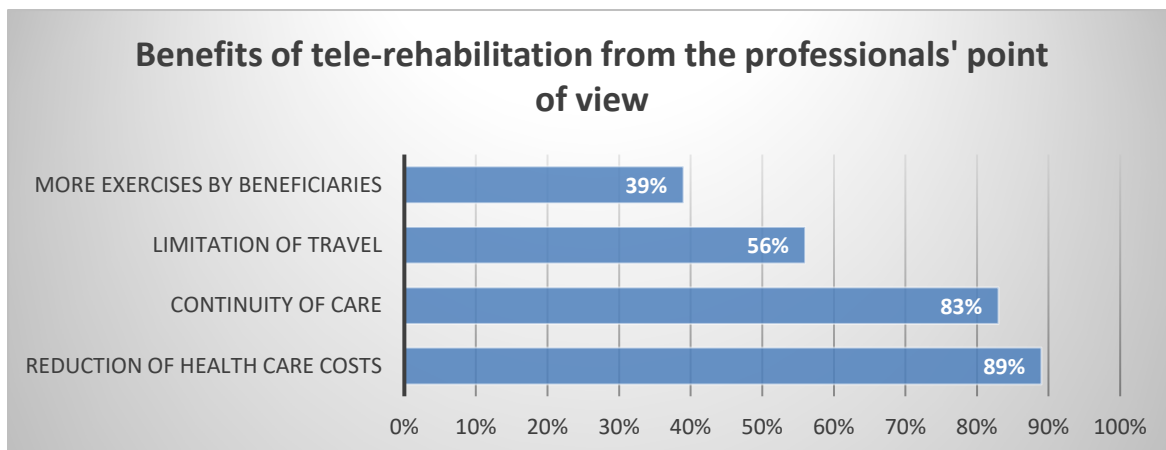
Based on data obtained from 27 professionals and 71 beneficiaries in the three countries, this study identified the obstacles and levers to the use of tele-rehabilitation following the experiments.

Feedback from professionals

The use of a rehabilitation application is considered by 94% of the professionals as useful in the practice of tele-rehabilitation. These applications can be a source of knowledge for some professionals who discover new exercises that they can then transpose into their practices in the rehabilitation centre. However, these mobile applications have limitations:

- First, a technological limitation: Only 37% of beneficiaries were able to download the application onto their phones.
- Secondly, a limitation on the target populations: the inclusion of young children may be limited because the exercises proposed are not adapted to their profiles/needs.
- Linguistic and ethnic limitations: the languages available are not always those mastered by the target population. The images and exercises do not take into account the ethnic diversity of the contexts in which HI projects operate, thus not favouring the identification of the beneficiaries.

Numerous technological limitations were identified, in particular the absence of a smart phone and the difficulties of accessing the internet for the beneficiaries. However, in order to adapt to the intervention contexts and limit the technological constraints, the professionals were able to use a whole range of tools to ensure communication and follow-up with the beneficiaries (video calls, sending sms, mms, voice messages or printing the programmes on paper). Despite the difficulties, professionals believe that there are many advantages to using and developing tele-rehabilitation.

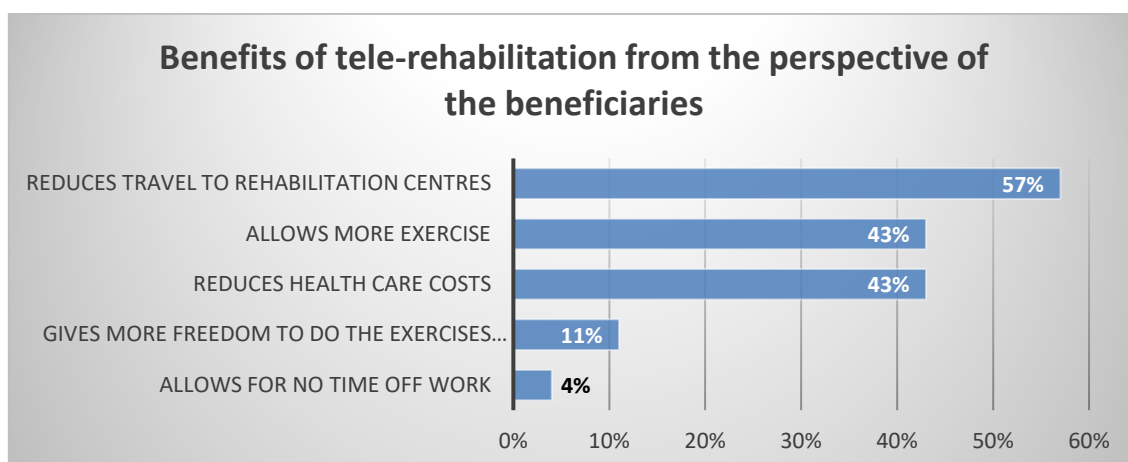


Feedback from beneficiaries

Beneficiaries share positive feedback on tele-rehabilitation. 43% indicate that tele-rehabilitation is the same or better than traditional rehabilitation. 40% believe that tele-rehabilitation brings significant progress in improving mobility, pain, functional capacities and social participation. Nevertheless, there are some limitations and obstacles:

- In terms of human factors, socio-demographic factors have been identified as limiting factors. Thus, older age, lower education level and the presence of difficulties in reading or understanding the exercises would favour the abandonment of the follow-up during tele-rehabilitation.
- In terms of technological factors, there are frequent difficulties in accessing electricity and internet for 1/3 of the beneficiaries and the lack of a smart phone.
- The environment: the living environment is not always suitable, particularly due to the lack of equipment for rehabilitation exercises. However, the visualization of the environment is an important advantage for the professionals, as it allows a patient-centred approach to adapt the exercises and to individualize more specifically the rehabilitation objectives.

While there are identified barriers, there are benefits to using tele-rehabilitation for beneficiaries.



Success factors & challenges

The main success factor was the experimentation, which led to a change of perspective on tele-rehabilitation. Before the experimentation, some professionals did not know about this system and 22% thought it was not adapted to their intervention context. After the experimentation, all the professionals and 97% of the beneficiaries wished to continue using tele-rehabilitation.

However, tele-rehabilitation requires changes in professional practices. The setting up of interprofessional work sessions and training seems to be factors that encourage the support and motivation of professionals to integrate these new practices. Conversely, a lack of training for local players or the absence of regular support for professionals in the field has been identified as a factor of failure.

The absence of an economic model, and the lack of financial resources from a revenue point of view, is for some of HI's partner structures a limit to the deployment and sustainability of tele-rehabilitation. The economic aspect also comes into play for the beneficiaries. The possession of a smartphone, the purchase and access to mobile data are limiting factors that may exclude some beneficiaries from tele-rehabilitation.

E. Conclusion

Tele-rehabilitation is not intended to replace traditional rehabilitation, but it can be a complementary device that limits travel and promotes continuity of care for beneficiaries who live far from centres.

Tele-rehabilitation is seen as a solution to be developed for both professionals and beneficiaries. The implementation and deployment of these digital solutions require the support of professionals through training to use and integrate these devices. The creation of procedures and recommendations, defining inclusion criteria (motivation, age, possession of a telephone, level of coverage, level of understanding, the person's environment) and monitoring methods (evaluation methods, frequency of monitoring) can be tools enabling professionals to integrate these digital devices into their professional practices and limit situations of refusal or abandonment by beneficiaries.

The sustainability and development of tele-rehabilitation will also be linked to the national e-health policies developed and promulgated by the countries. The definition of a sustainable economic model for the structures and accessible to the most vulnerable will be one of the challenges to be met in order to think about tele-rehabilitation in the long term. The use of digital tools requires the improvement of connectivity, the level of coverage and access to the Internet in the various countries.

This research focuses on rehabilitation and has identified obstacles and levers for improving future projects. However, these elements of reflection are not limited to this field and can benefit other sectors which also rely on new technologies, such as mental health or education.



The complete study, as well as this brief, is available in English, French and Spanish. These documents are available on [HiLibrary](#).