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PANEUROPEAN DIMENSION OF TELEREHABILITATION BASED ON ICT SERVICE PLATFORM. THE DESCRIPTION AND EARLY RESULTS BASED ON HABILIS PLATFORM IMPLEMENTATION IN POLAND FOR ELDERLY PATIENTS SUFFERING CHRONIC HIP AND KNEE OSTEOARTHRITIS

(PROJECT CLEAR)



CLEAR

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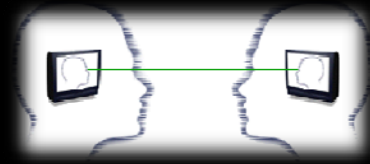
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||| Telerehabilitation on Wikipedia

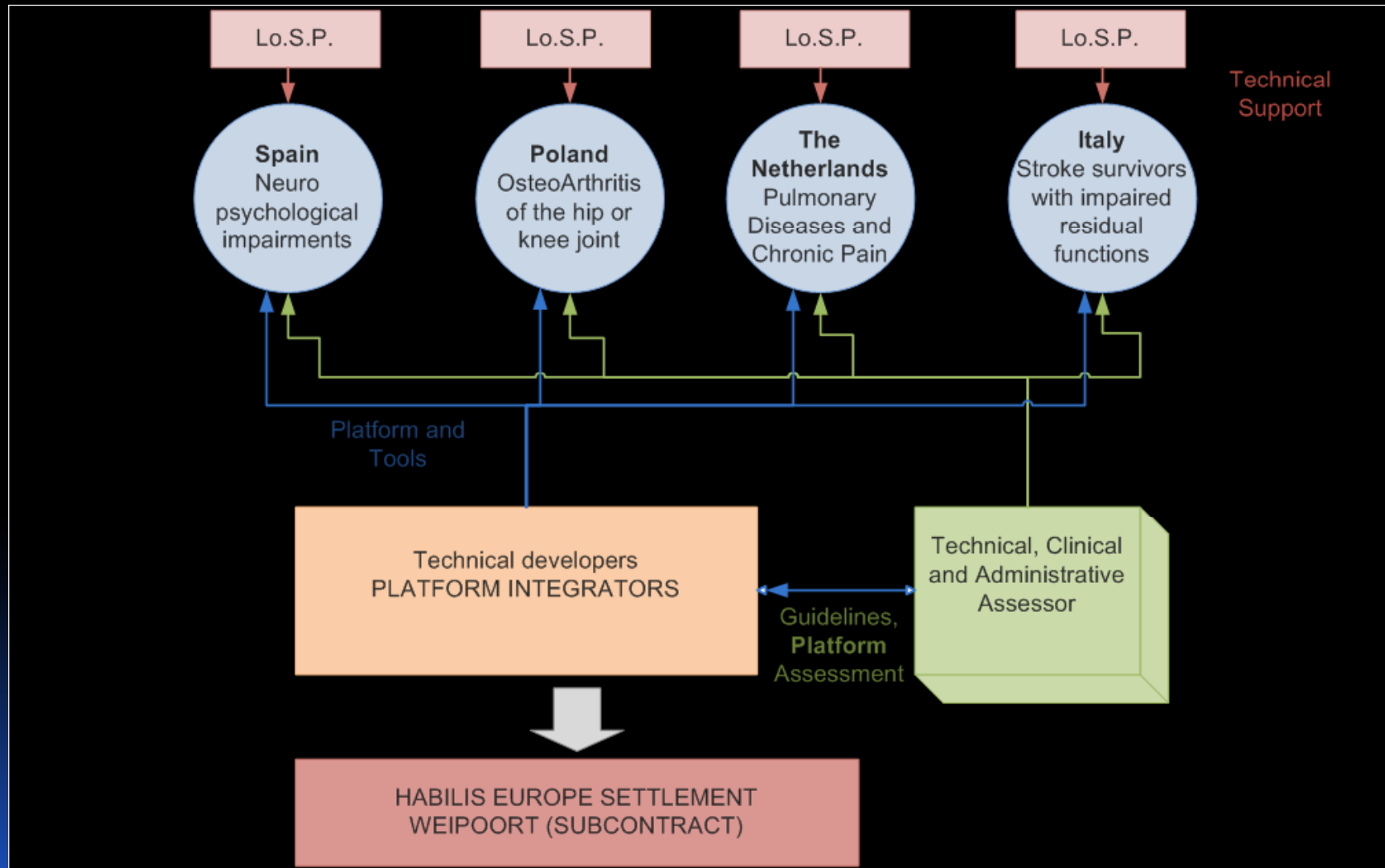


- Accordingly to “Wikipedia” (<http://en.wikipedia.org/wiki/Telerehabilitation>) telerehabilitation (or e-rehabilitation) is described as the delivery of rehabilitation services over telecommunication networks and the internet. It can deliver therapy to patients who are not able to travel to a clinic due to their disabilities or other reasons. This new approach also allows rehabilitation experts to provide a clinical consultation at a distance.

European project CLEAR

- Within the European project CLEAR (Clinical Leading Environment for the Assessment and validation of Rehabilitation Protocols for home care), a telerehabilitation program has been designed and implemented for chronic disorders affecting elderly population like: cognitive, neurologic, pulmonary and musculoskeletal disorders.
- The project was launched, within the ICT-PSP framework, to implement a telerehabilitation service and to elaborate the base for telerehabilitation services across European Community.

Project CLEAR



HABILIS EUROPE

- The core of the service is a platform called Habilis (www.habiliseurope.eu). An innovative telerehabilitation services are implemented in four Member States of the European Union (Italy, Spain, The Netherlands and Poland). Beyond the project wider scope of concept called HABILIS EUROPE reveals.
- The HABILIS EUROPE concept objective is to establish a network of companies, providing an expandable set of telerehabilitation services across the European Union.

Telerehabilitation

- The Clinically oriented project CLEAR implements home rehabilitation protocols and therapies for patient who execute their daily rehabilitation tasks at home or at the nearest external rehabilitation unit (Kiosk), with or without the direct supervision of the Physiotherapists or Physicians.
- All performed tasks are registered and stored over the Platform that allows the therapists to analyze and assess patient's progress directly or more frequently asynchronously.
- Synchronus videoconferencing system allows for direct communication.
- Additionally, the platform provides tools for patients monitoring and for statistical evaluation of the patients compliance.

Telerehabilitation- Project CLEAR

- The objective is to present the preliminary results of a pilot study aimed at evaluating effectiveness and safety of a new integrated approach of ICT based telerehabilitation for hip and knee osteoarthritis patients who suffer musculoskeletal pain and strong disabilities awaiting total joint replacement as a final treatment to restore their walking abilities and relief their daily pain.

Material and methods:

- Preliminary group of 15 patients (6 males and 9 females) enrolled to the CLEAR Clinical Study were assessed utilizing musculoskeletal oriented questionnaires and physical examination pre- and post treatment.
- The average age of patients from the preliminary group was 51,3 years (from 35 to 78).
- One younger patient was enrolled to this study due to chronic and severe hip osteoarthritis. However, the typical patient enrolled to this study belongs to the age group „50“ and older.

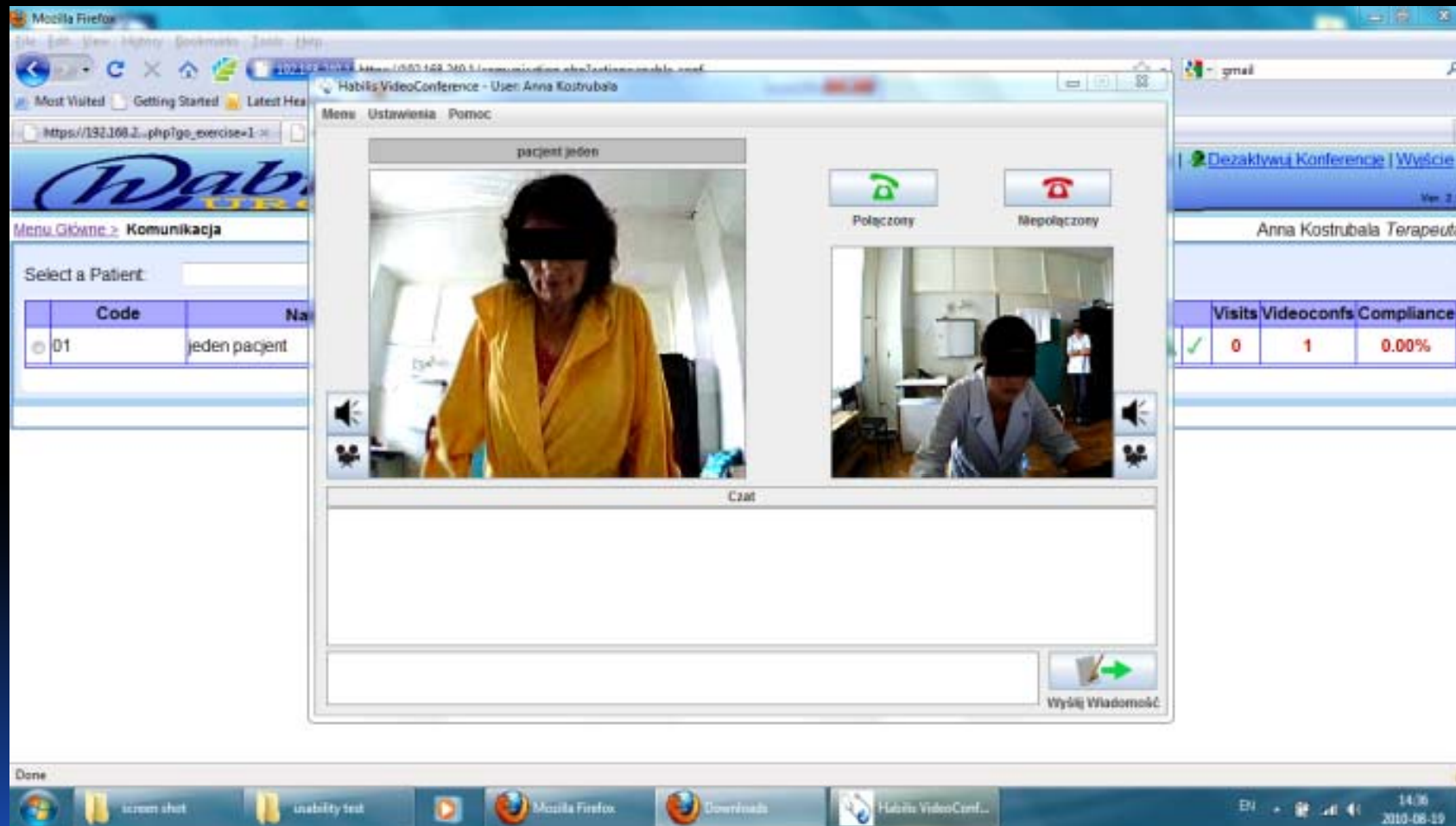
Material and methods:

- Patients average height was 164,9 cm (150-180) and weight 73 kg (46-98).
- Patients suffered the hip osteoarthritis and related pain and disabilities.
- The average duration of symptoms was 6 years.
- Patients were awaiting for Total Hip Replacement already 15 months.
- Self reported questionnaires (Harris Hip Score, HOOS, WOMAC, SF-36) and physical exam measurements were performed to assess patient's achievements.

Material and methods:

- The core technology consists of an open interoperable robust platform independent from any specialised hardware, which enables different users to design and implement individually tailored clinical treatment protocols for home rehabilitation, execute home therapies 24/7/365, receive remote supervision of health care professionals during the treatment and allow an access to the data.
- The equipment and software modules dedicated for telerehabilitation consist of the:
- Server, Service Administrator Module, Patient's Stations, Doctor's (Physiotherapist's) Stations and Videoconference Module.

Videoconference Module Patient-Therapist session



Menu Ustawienia Pomoc

pacjent jeden

Połączony Niepołączony

Czat

Wyślij Wiadomość

Code	Na
01	jeden pacjent

Anna Kostrubala Terapeuta

Visits	Videoconfs	Compliance
0	1	0.00%

Results:

- The exercise program was concluded by 15 participants.
- After 4 weeks exercise program we observed No adverse clinical events.
- Home exercise compliance was high.
- Their hip related quality of life accordingly to HOOS Score and daily functional living improved.
- Some selected hip movement ranges changed after the internet based home telerehabilitation nonsignificantly.
- No significant deterioration was noted.

Results:

- Patients satisfaction after use the telerehabilitation platform and service was measured as a sum of scored answers concerning pleasure to work with, difficulties while work with, lay-out clearance and pleasure to work with videoconference or text and motivation, recommendability of the service.
- The sum score so far achieved 86,6% among patients who finalized their individual program that can be interpreted as high satisfaction level of using the platform and service.

Conclusions

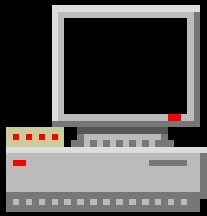
- Healthcare system benefits are expected from the 4 weeks individually tailored, intensive rehabilitation program for chronic osteoarthritis utilizing ICT enhanced HABILIS Platform.
- Results show the potential benefits for musculo skeletal disorders patients.
- Considered benefits require wider view to see its supplementary role within established rehabilitation services particularly useful for distant patients who are not able to travel due to various reasons.

Conclusions

- The service implementation may equally deliver the service to locally distant patients and to far distant patients as well (including cross-border patients).
- It may deliver certain benefits for the Regional Health System.
- Preliminary data confirm this approach to rehabilitation program as safe and effective.
- Further studies are planned to verify the efficacy of the rehabilitation program, patients', caregivers' and clinicians' satisfaction, factors which influence treatment outcome and compliance.

Acknowledgement

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Thank you for your
attention

