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Program of Technological Rehabilitation Nursing

Relevance

"People on board: transforming healthcare by blending agility, responsiveness, and resilience" and digital and technology driven transformations are undoubtedly underlying the program presented here.

The Tâmega e Sousa Hospital Center (CHTS) covers 5% of the Portuguese population, distributed over two thousand square kilometers. The geographical characteristics of the region where it is inserted, makes it distant from the majority of its users.

Physical distance, when it comes to health care, is in itself a barrier when quality care is sought, centered on the user; customization of services, humanization and quickness in providing assistance in different areas.

Increasingly people are talking about taking the hospital to the patient's home. The + P.E.R.T.O., "Program of Technological Rehabilitation Nursing", wishing to mean "+ near ", meets this need and, in innovative and pioneering way, aims to respond very quickly to a group users.

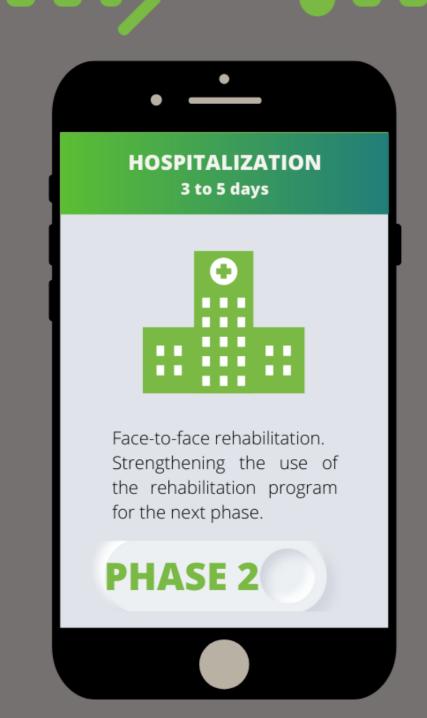
Annually we perform about 220 total knee arthroplasties (TKA), in which users remain hospitalized for an average of 3 to 5 days.

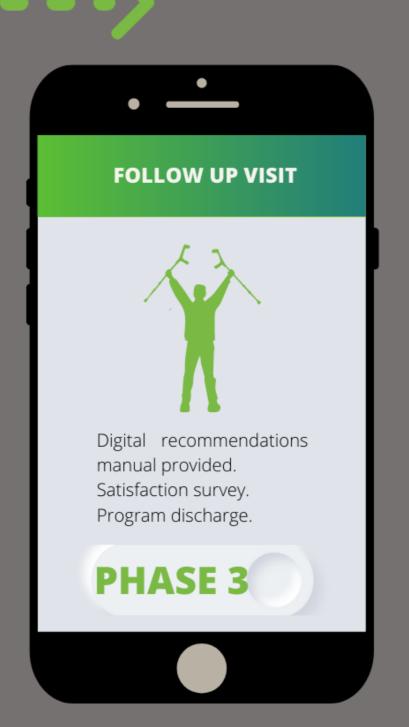
+ P.E.R.T.O. aims to implement a digital rehabilitation program, accompanied by a communication and monitoring channel, via APP, for these eligible users and caregivers to join.

30 to 15 days

Figure 1. Phases







PERTO

USEFUL INFORMATION

Discover your knee

Prepare your home

Breathing exercises

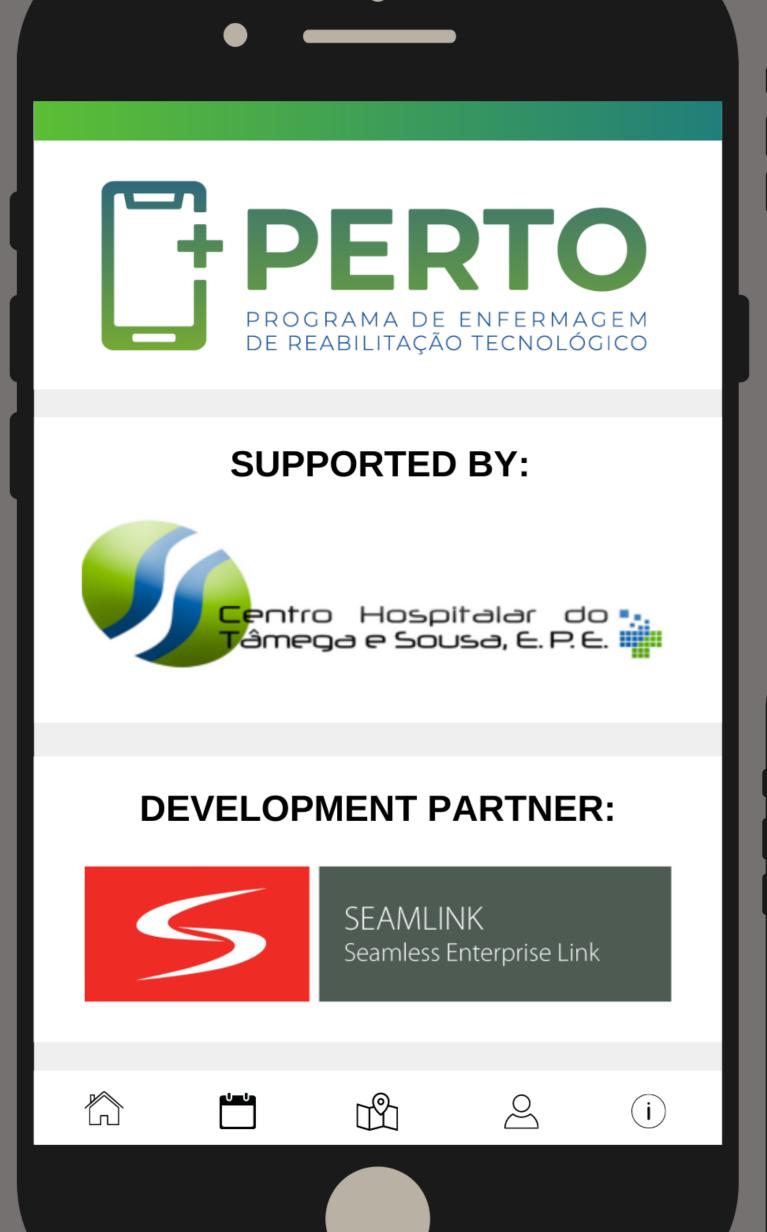
Walking aid

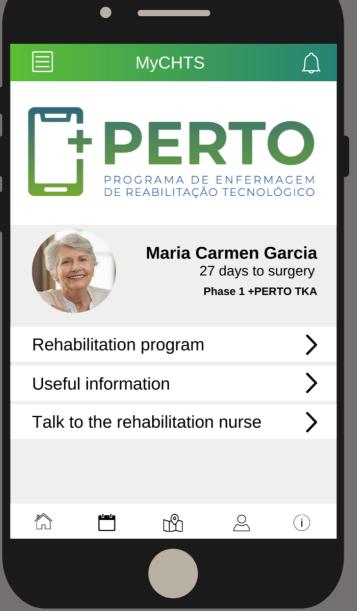
Showering and using the toilet

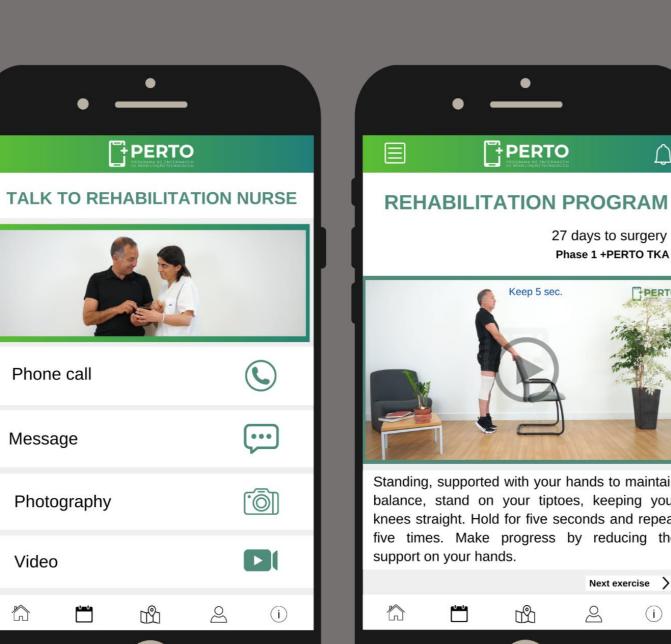
What will happen to me while I'm

And after hospital discharge?

Figure 2. App display







Context and aims

The team of orthopedic rehabilitation nurses has always been concerned with preoperative preparation, providing tools for safer surgery, with follow-up calls, but at this moment, there is a need to follow the evolution, update and still better rehabilitation nursing care where proximity, availability and on-time monitoring are some of the strengths.

Objectives of the APP: physical, psychological, preoperative preparation and increase of the person's capacities for a better surgical experience, potential, empowerment in their rehabilitation process and postoperative recovery.

Section 1 Exercise program aimed at rehabilitation: • Phase 1 - preoperative (preparation); • Phase 2 - hospitalization; • Phase 3 - post-operative (recovery). Section 2 Useful information section with feedback system. Section 3 On-time monitoring and follow-up section. Section "talk to the rehabilitation nurse", a communication channel that it also allows to assist the user and caregiver in decision making in aspects such as: pain, edema and surgical wound. It also allows you to make a video call to monitoring of exercises in real time.

The preoperative nursing consultation will be the starting point. There, an education extended to the user and caregiver, you will be provided with the credentials of access and from that moment on they will have access to a set of information and exercises that will prepare you for surgery and help you with your functional recovery until 6 weeks.

Findings

A better transition in the health/disease process of these users, increased awareness of the real recovery, functionality and post-operative expectations.

Innovative contribution to policy, practice and/or research

The existence of something like this in rehabilitation nursing care is unknown and offers the possibility of becoming transversal to other groups with regard to this specific care, providing more quality of life to a greater number of people.

Bibliography

Bitsaki M, Koutras G, Heep H, Koutras C. Cost-Effective Mobile-Based Healthcare System for Managing Total Joint Arthroplasty Follow-Up. Healthc Inform Res. 2017;23(1):67. Available from: https://doi.org/10.4258/hir.2017.23.1.67

Canada Health Infoway. Emerging Technology Series: Mobile Health Computing between Clinicians and Patients. White Paper [Internet]. 2014.

Day MA, Anthony CA, Bedard NA, Glass NA, Clark CR, Callaghan JJ, et al. Increasing Perioperative Communication With Automated Mobile Phone Messaging in Total Joint Arthroplasty. J Arthroplasty. 2018 Jan;33(1):19–24. Available from: https://doi.org/10.1016/j.arth.2017.08.046

Degenhard J. Utilizadores de smartphones em Portugal 2010-2025 [Internet]. Statista. 2021.

Dekkers T, Melles M, Groeneveld BS, de Ridder H. Web-Based Patient Education in Orthopedics: Systematic Review. J Med Internet Res. 2018 Apr 23;20(4):e143. Available from: https://doi.org/10.2196/jmir.9013

Huang Z, Pan X, Deng W, Huang Z, Huang Y, Huang X, et al. Implementation of telemedicine for knee osteoarthritis: study protocol for a randomized controlled trial. Trials. 2018 Dec 17;19(1):232. Available from: https://doi.org/10.1186/s13063-018-2625-4

Krumsvik OA, Babic A. Designing a Safety Reporting Smartphone Application to Improve Patient Safety After Total Hip Arthroplasty. Stud Health Technol Inform. 2017;238:84–7. Available from: https://doi.org/10.3233/978-1-61499-781-8-84 Ministério da Saúde. Retrato da Saúde, Portugal [Internet]. Lisboa; 2018.

Pastora-Bernal JM, Martín-Valero R, Barón-López FJ, Estebanez-Pérez MJ. Evidence of Benefit of Telerehabitation After Orthopedic Surgery: A Systematic Review. J Med Internet Res. 2017 Apr 28;19(4):e142. Available from: https://doi.org/10.2196/jmir.6836

Rathbone AL, Prescott J. The Use of Mobile Apps and SMS Messaging as Physical and Mental Health Interventions: Systematic Review. J Med Internet Res. 2017 Aug 24;19(8):e295. Available from: https://doi.org/10.2196/jmir.7740

Rocha TAH, Fachini LA, Thumé E, Silva NC da, Barbosa ACQ, Carmo M do, et al. Saúde Móvel: novas perspectivas para a oferta de serviços em saúde. Epidemiol e Serviços Saúde. 2016;25:159–70.

Roter DL, Hall JA, Merisca R, Nordstrom B, Cretin D, Svarstad B. Effectiveness of interventions to improve patient compliance: a meta-analysis. Med Care. 1998;1138–61.

Steinhubl SR, Muse ED, Topol EJ. Can Mobile Health Technologies Transform Health Care? JAMA. 2013 Dec 11;310(22):2395. Available from: https://doi.org/10.1001/jama.2013.281078

Tousignant M, Moffet H, Nadeau S, Mérette C, Boissy P, Corriveau H, et al. Cost Analysis of In-Home Telerehabilitation for Post-Knee Arthroplasty. J Med Internet Res. 2015 Mar 31;17(3):e83. Available from: https://doi.org/10.2196/jmir.3844
World Health Organization, mHealth: now borizons for health through mobile technologies, 2011

World Health Organization. mHealth: new horizons for health through mobile technologies. 2011.