

Development of a trusted healthcare service to support self-management and a physically active lifestyle in COPD patients

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Introduction: In chronic disease management, such as in chronic obstructive pulmonary disease (COPD), technology can play an important role to increase the quality and efficiency of care. In the THECS project, which is part of the large Dutch COMMIT programme, we aim to develop a trusted healthcare service to support patients' self-management and a physically active lifestyle.

Previous experiences in COPD telerehabilitation, using activity monitoring, ambulant feedback, online exercise programmes and teleconsultation [1-4] have been used as input for the development of the new service platform, following an iterative, user-centred design approach [5]. Stakeholders took part from the onset of the design process, by means of interviews, co-creation sessions and workshops.

Methodology: The first prototype is being developed and consists of a webportal, with connection to an ambulant activity coach. The prototype includes the modules:

- 1) Activity coach, for ambulant activity measurement and real-time feedback on a smartphone to improve daily activity behaviour
- 2) Web-based exercise programme, for exercising at home
- 3) A symptom diary, for self-management of COPD exacerbations
- 4) A group forum, to exchange experiences with fellow patients

The webportal also provides an overview of measured activity data from the activity coach, and an overview of measurements, questionnaires and diary to monitor progress and adapt treatment. In addition, the webportal provides treatment information, teleconsultation and digitized treatment card containing the patient's appointments. The involved care professionals have access to the 'professional webportal', where they can manage e.g. care paths and patient measurements.

Results: Previously developed telerehabilitation modules have shown the potential of supporting patients with COPD. Thirty-four COPD patients participated in a pilot RCT, using the activity coach and symptom diary for 1 month, and positive changes were observed for health status [1]. COPD patients also significantly changed their activity level in response to the motivational cues provided by the activity coach [2].

A telerehabilitation programme consisting of the activity coach, triage diary and online exercise programme, was implemented in primary and secondary care, and used for 9 months in a pilot RCT (n=30) [3]. Another exercise-based telerehabilitation service consisted of an exercise programme and teleconsultation module. The service was delivered to the patients (n=54) in two ways: as substitute (partly) of their pulmonary rehabilitation or as supplement to their pulmonary rehabilitation, [4] to investigate efficiency of healthcare.

Discussion: The current prototype will be evaluated late 2013, regarding use, acceptance, usability and trust concepts. The healthcare service will be further developed based on the outcomes of the first evaluation. Subsequent studies will investigate clinical outcomes and care efficiency of the healthcare service.

Conclusion: A healthcare service is being developed for application in COPD rehabilitation, based on both user needs and recent advances in COPD telerehabilitation. We expect that the healthcare service will improve care efficiency and will support patient self-management.

References

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