Listening to the patients
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Publication date:
2017

Document Version
Publisher's PDF, also known as Version of record

Link to publication from Aalborg University

Citation for published version (APA):

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BACKGROUND
Cardiac diseases is the leading cause of deaths worldwide [1]. Cardiac rehabilitation requires patients to make both short- and long-term lifestyle changes. [2]. One solution for giving patients a better opportunity to change behavior may be personalized rehabilitation programs that use interactive telerehabilitation or eHealth web portals that can facilitate patient education. Several studies indicate that eHealth systems to be successfully implemented, the end-users’ needs and concerns need to be taken into consideration. [3,4,5]. In our view, the chances of operational success are greater by employing a patient-centered and participatory design (PD) in the design and development process. [3,4,5]

AIM
The aim of this study was to evaluate the design and usability of a cardiac telerehabilitation web portal called the “HeartPortal”

METHODS
Phase I: Development of ideas
Aim: Needs assessment and idea generation
Method: 8 workshops with heart failure patients, relatives, heath care professionals, health technology companies, and researchers
Time: November 2015 to June 2016
Participant: 3 patients November 2016 to June 2017
Phase II: Evaluation of design and structure
Aim: To evaluate the structure and user-friendliness of the “HeartPortal”
Method: Questionnaire survey and tasks assignments on: Use of technology; Experience of user-friendliness; Structure of the HeartPortal
Time: December 2016
Phase III: Testing usability
Aim: To test the usability of the interactive information site and the health monitoring and activity tracking module of the HeartPortal
Method: Questionnaires comparable to phase II with additional questions regarding data presentation and interpretation of graphical illustrations.
Time: February 2017

CONTEKT
A Telerehabilitation program was developed (See Below).

Heart Portal
The Heart Portal was designed with four elements: 1) Interactive information site that provide information on rehabilitation issues, 2) a health-monitoring and activity-tracking module, 3) self-reported outcomes, and 4) a communication platform

User Evaluation
The user evaluations were done trough questions with heart failure patients and healthcare professionals.

<table>
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<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly disagree</th>
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<td>0/0</td>
<td>0/0</td>
</tr>
</tbody>
</table>

It is easy to navigate on the HeartPortal.

The information is understandable.

The information is relevant for the disease.

I feel secure in using the information.

I understand the graphs.

The graphs are clear and have an appropriate size.

Patients being updated on activity helps to improve their health.

Answers from the Usability Evaluation. The numbers are percentage of answers in presented as (% Healthcare professionals) / (% Patients)

RESULT
Usability of the HeartPortal
All participants felt comfortable using the HeartPortal
All agreed that the portal was easy to use, understandable, relevant for the disease, and comprehensive

The majority of the participants felt that being updated about their activities through the tracking devices could help to improve their health condition.

Our findings show that HF patients, their relatives, and HCP had an overall positive experience of the web portal and that end-users’ needs and ideas have been integrated into the portal.

CONCLUSION
Based upon a PD process, an interactive HeartPortal for the use in a telerehabilitation program for HF patients has been designed and developed.
Evaluation of the portal by patients and HCP shows the design and structure of the HeartPortal to be logical and easy to navigate.

The study shows the absolute importance of PD in developing web-based technologies for patient users.

ACKNOWLEDGEMENT
We wish to thank the HF patients, their relatives, and healthcare professionals for participating in this study. We also wish to thank the healthcare professionals at the healthcare centers in Skive, Viborg, and Randers, and the Cardiology Departments at the Regional Hospitals of Viborg and Skive for their cooperation. Thank you to Aage and Johanne Lasnæs-Hansen for making this study possible.

REFERENCES