Patient profiles for design: tailoring rehabilitation consults in orthopaedics

Marijke Melles*, Rosèl van den Berg*, Froukje Sleeswijk Visser*, Jim Lancaster®, Stephan Vehmeijer®

*Faculty of Industrial Design Engineering, Delft University of Technology, Delft, THE NETHERLANDS; 
®Biomet Europe BV, Dordrecht, THE NETHERLANDS; ©Orthopaedics Group, Reinier de Graaf Hospital, Delft, THE NETHERLANDS

1. Introduction

This project concerns the exploration of tailoring orthopaedic rehabilitation consults by means of design interventions (Berg, 2014). Hip patients differ widely in their rehabilitation behaviour, ranging from how they perceive medical information to how they act during their rehabilitation. Two main types of rehabilitation behaviour are recognized that are presumed as initiators for unnecessarily prolongation of one's rehabilitation period and patient dissatisfaction: (1) an over-active rehabilitation behaviour which can cause a dislocation of the hip or physical relapse of the body, and (2) an over-passive rehabilitation behaviour which can cause a long period of stiffness of the body. As little is known about the motivations and influencing factors behind rehabilitation behaviour, it is challenging for orthopaedists to tailor their 10-minute consult to specific patient requirements. For example, should they emphasize the necessity of doing exercises and motivate the patient, or should they emphasize the necessity of adhering to the restrictions and suppress a patient in being too active?

Four preliminary patient profiles are defined, mainly based on patients' personal expectations and coping behaviour during rehabilitation. Tailored towards these four patient profiles, an application is developed that provides tools and visuals to support the explanation of treatment options and to discuss the patient's personal expectations during orthopaedic consults. The overall goal of this design intervention is to let the orthopaedist and patient effectively talk about the patient's personal expectations of the rehabilitation period, in such a way that the patient develops realistic expectations resulting in confident and responsible rehabilitation behaviour. In this presentation we will discuss our research approach, the four patient profiles and our design intervention.

2. Method

The project was carried out according to the 'Design Thinking' method (Cross, 2011). This user-centered design method is divided into five iterative phases. In the first phase the designer empathises with the target group and their context until a thorough understanding of the problem is reached. This results in the definition of a point of view in which the actual design challenge is defined. An iteration period of ideation and prototyping follows. At the end tests are carried out to evaluate the final design.

From literature, the Health Action Process Approach -HAPA- model (Schwarzer, 2008) was taken as starting point to explain the rehabilitation behaviour of patients. Comprehensive user studies followed to investigate orthopaedic consults in practice; observations of consults, interviews with patients and orthopaedists and a questionnaire among patients. Based on these studies four patient types were defined. In addition, a detailed consultation experience journey was developed to visualise the current situation and to point out opportunities for design interventions. Next, through an iterative design process including several co-creation sessions with orthopaedists, a final design intervention was created: BiConnect. An interactive prototype was built to test the product during actual consults.

3. Results

Four patient profiles were defined, starting from the level of involvement in their treatment path (passive or active) and the extent that rehabilitation instructions are followed: the achiever, the analyst, the realist and the sentimentalist. BiConnect is an application that is used by patients as well as orthopaedists at different touch points throughout the patient experience journey. The patient has a digital intake that contributes to a better preparation of patient and orthopaedist. During the consultation BiConnect serves as a supportive tool
for communication and after the consultation patients can review personal advice given during the consultation and look up more information. Both patient profiles and BiConnect were positively reviewed during evaluation studies with orthopaedists and patients.

4. Discussion

In the wake of the 21st century, healthcare faces an exponential rise in expenses and limitations to financial and human resources. This leads to the need for shorter consults and hospital stays, increasing the patients’ responsibility regarding treatment and rehabilitation. This requires dedicated products and services which will empower patients to manage their personal health. Patient profiling, with a focus on personal preferences like outcome expectancies and coping behaviour, has great potential as a tool to design such dedicated medical product-service systems. Although the use of customer profiles for designing consumer products is widespread, currently there is no validated set of customer profiles for medical products. We therefore aim to define a set of validated design-oriented patient profiles and test the affectivity of integrating patient profiles in medical product-service systems.

References

