

Summary

This thesis was written in cooperation with the neurology department of hospital Medisch Spectrum Twente (MST). It is part of a project focussed specifically on developing a daily aid for patients with Parkinson's disease. This is a degenerative neurological disease that mainly influences motor functioning, but influences behaviour and cognition as well (Truong et al., 2016). Perhaps one of the most incapacitating symptoms of PD is freezing of gait (FOG). This is an involuntary halting of movement during walking tasks. A common treatment to mitigate the occurrence and severity of FOG is the use of auditory, visual or tactile cues

This thesis is a side track of an ongoing research project that uses vibrating socks as a tactile based cueing device to mitigate the effects of FOG (Koopman et al., 2019). The aim was to design a front-end design for an all-round application that will aid disease management for Parkinson Patients. This would be achieved by developing a prototype that would be demonstrably feasible and demonstrably usable.

After literary research was performed and the target group was observed, a first draft prototype was developed. This first draft was tested by two experts in the application development field. This resulted in a second draft that was then reviewed by a group of non-patients. Which was done to fix any general flaws, so they would not distract from the application's purpose when presented to representative users.

In general, the application was described to have clear navigation with a clean look and feel. According to the field experts, it was very clear that a lot of thought had gone into the UX and was executed well. After the feedback of the experts was incorporated, they deemed producing such an application feasible. Therefore, we could conclude that the results of the non-patient tests demonstrated that the application would be feasible.

After these non-patient tests the final prototype was developed. The final prototype was then presented to four Parkinson Patients, two online and two in real life. Generally, the applications navigation, UI, and proposed functions were well received and understood. Most of the patients expressed interest in using the app and some even asked when it would become available for use. This mostly positive reception implies there is reason to believe that the application is usable for the target group. However, as two patients expressed they can only say anything substantial about the application's usability when testing with a functional prototype. Therefore we concluded that the application's usability is only partially demonstrated.

Since the usability was only partially demonstrated the main aim of this thesis was only partially achieved as well. This aim can be achieved by testing with a fully functional application that would be tested in a domestic setting for a longer period of time. We believe that the positive response from the patients merits a continuation of this thesis, but would perhaps benefit from a collaboration with SanaCoach Parkinson and ParkinsonThuis II.