Qiki keeps you going, gently

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Abstract

This paper describes the idea behind Qiki as well as the design process and the final concept. Qiki is a product designed to help people with Alzheimer's disease structure their life and stay active. It is developed in close collaboration with patients, caregivers, and Alzheimer experts. First evaluation results are promising.

Introduction

It is commonly known that in Western societies the older population is growing. The demographic change, due to the proportional rise in the ageing population, will have an impact on our health care sector. In the Netherlands, for example, the prevalence of dementia in 2050 is approximated to be 400.000 [1]. The increasing population of older people in need of care will encounter a shortage of (young) care providers. Therefore, we need technology to improve care of older patients. Most technological development (domotica) focuses on surveillance. This increases supervision on people, and consequently does not make them more self-sufficient. Qiki aims to directly support people with Alzheimer's disease, from the beginning stages to the later stages. In this paper the design process is described, and first evaluation results are presented. Finally a plan for future implementation and evaluation is sketched.

Design Process

Steps in the design process

Qiki was developed during a bachelor graduation project. It was designed in an iterative way, together with stakeholders (people with dementia, family members, and professional caregivers). First, the problems in dementia were investigated through literature research, observations and interviews with stakeholders. It turned out that dementia leads to inactivity and problems in structuring daily activities [2]. Early in dementia, people get easily confused. Later, they lose interest and are only activated through tactile contact. This led to the initial concept of a device which should address people (to make them more active), help them to structure the day, and invite tactile interaction. The device should also be attractive and user friendly. Through a series of prototypes, Qiki gradually got its present form.

Characteristics of Qiki

Qiki has three main characteristics: first, it approaches the user in a positive manner; second, it fits the needs of the user in various stages of the disease; and finally, all stimuli coming from Qiki are familiar to the user.

Figure 1. A group of Qiki's. Different fabrics for different people.

In the early stage of Alzheimer's disease, people easily get confused, understanding the day rhythm can be difficult them. Qiki helps the user in a positive manner by pointing out and inviting to participate in common activities throughout the day. For instance, Qiki may wish the user good morning, and tell her she will be picked up for daycare soon. Later in the day she may remind the user that it is time for a cup of coffee.

In a later stage, tactile contact becomes more important. Qiki's tactile stimuli are recognizable and positive. If Qiki is caressed it purrs like a cat; when tickled, Qiki laughs. If Qiki is dropped accidently, it says 'ouch' and will be unresponsive (als hij huilt: 'will cry') for two seconds (erg kort?). Qiki may also propose joint activities, like singing songs.

Qiki is programmed before use. Through a computer, Qiki is equipped with a voice, recorded from a friend or relative. The familiarity of the recorded voice is important to increase cultural connection and recognition. Also the week scheme is installed. The exterior can be adapted; the cover can vary from soft silk to warm wool.

Qiki is neither a toy, nor a pillow. She has an abstract shape with a recognizable character. The drop-like shape is inviting without being childish. The cover, like the voice and day scheme, is adaptable. On the outside there are no buttons, screens, led lights, or wires that indicate it is a technological product. The textures of the different fabrics allow for recognition.

First evaluation

Method

As part of the bachelor project, Qiki was evaluated in a nursing home. People living in the home were invited to try Qiki during the regular group meeting at the daycare center. The technology inside the Qiki prototype still needed to be connected to a computer in order to work. To avoid Qiki coming across as a high-tech device, a long cable, hidden in fabric, was used to connect to a remote laptop. The interactions with the Qiki prototype were videotaped. Afterwards, the footage was discussed in a focus group of four psychologists with expertise in Alzheimer's disease.

Results

During the test period, Qiki was very well received. The patients liked its look and feel, and actively responded to it. One of the patients even refused to give it back to the researcher, and was reproached for that by one of the other residents. During the focus group the participants agreed that the users were intrigued by Qiki. While they explored the interaction possibilities of the prototype, the users did not look scared. Additionally they remarked that the people, who did not interact with Qiki directly, also got involved, although in a less active way. Thus, the effects were not only on the individual user, but also on a group level.

Figure 1. Stills of the film of the first pilot tests. Patients interacting with a Qiki prototype.

Discussion and Conclusion

The first results of testing Qiki in practice are promising. The device is user-friendly, and stimulates people with dementia to become more active. The basic idea behind Qiki appears to work. During the first test, an unexpected result was the impact on the group processes at the daycare center. Qiki is thus empowering patients not only in an individual way, but also in a social way.

Given the positive results, Qiki will be developed further and tested in a more structured way. The design is developed further by Widid and Unit040. The device will be tested in a nursing home, using both effect research and process research.

Qiki is an example of an innovation which can fit to future society. The technology in Qiki is smart and simple, and also user friendly. Qiki does not contain technological gadgets; it fits to the everyday life of its users. It does not aim to control the user, but to help him or her to structure his or her life, and to form new relations with others. In Qiki, technology does not take the form of big brother, but of little sister, paying attention to people in a playful way, inviting them to join in and helping them to give meaning to their life.

References

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