HOSPITAL RECOVERY : THE DEVELOPMENT OF MOTION SENSOR-RELATED APPLICATIONS TO INCREASE IN-HOSPITAL MOBILITY

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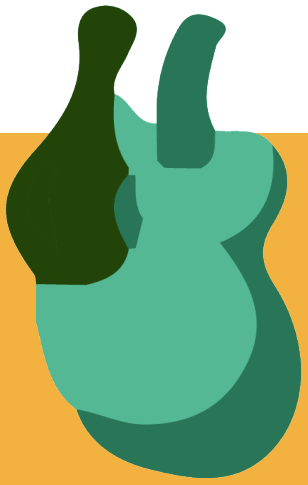
The benefits of prescribed exercises on the rehabilitation process of patients, such as lower mortality, morbidity, and costs, have been mentioned by many researchers. Several interventions are designed to increase mobility and decrease sedentariness in hospitalized patients. However, these interventions are entirely reliant on the physical aspect of patient interactions, which makes them expensive and time consuming. Those limitations can be reduced with the help of technology. According to the World Health Organization in 2011, mobile technology “has the potential to revolutionize the face of health services.”

Motion sensors are a promising medical innovation that could improve care for people with musculoskeletal problems (Chang, Chen & Huang, 2011). Awear is a start-up that specializes in creating technological aids for people’s rehabilitation processes, such as wearable motion sensors. The

DEPRESSION
ANXIETY
CONFUSION
LOSS OF SELF-STEAM



DEEP VEIN THROMBOSIS
POSTRUAL HYPOTENSION

CHESS INFECTION
PULMONARY EMBOLISM

Awear Spark is a single movement sensor that may be worn as a necklace or as adhesive patches on garments. Wearable sensors can track a person's movement and tell if they are walking, sitting, lying down, or standing. An auxiliary application stores the data and makes it possible for the user and the caregiver to keep track of mobility. The application's primary functions were up to the designer be determined; but the main goal of the application remained to improve patients' commitment to achieving their objectives in movements and prescribed exercises. The aim of this assignment is to answer is 'How can a digital healthcare platform based on sensor-based technology reduce sedentary behaviour in patients after non-salvage surgery while they are hospitalized".

Ban bedcentricity (Koenders et al., 2021) and Walk-For (Zisberg et al., 2018) were two interventions that were researched for the purpose of developing the Plant-b application, which corresponds to Awear motion sensors. The Plant-B application was made by translating the components of the chosen interventions into design features in the digital sphere. Plant-b employs a variety of tactics to guarantee the application's success. The application concentrates on the psychological capacity and motivation of the patients in order to increase adherence. The patients' psychological capacity is related to how well-informed and conscious they are about the advantages of mobility. The subgroups of physiological capability are the proper use of the ideal material, tone, and presentation of the risks of prolonged bed rest.

The Plant-B application will employ a number of techniques to encourage and reward patients for continuing their prescribed movements while they are in the hospital. By incorporating self-determinism theory, the Plant-B was created to guarantee that the user

felt relatedness, competence, and autonomy. The use of visual aids and the psychological effects of nature on people serve as the application's main pillars of support. The main purpose of the application is to simulate plant growth in order to determine how patients move around. Patients will be visually informed of the effects of their actions and mobility habits from a perspective of competence and autonomy. This will be displayed as the designated plant's growth. The initial evaluation of the Plant-B application was deemed successful; however, it is important to note that the time frame for this assignment left very little time for thorough user research and application advancements. During vulnerable times when the brain does not have the capacity to handle the many responsibilities, patients may be discouraged from continuing with the program. To address this concern, the plant-b application tries to signify positive reflection more than negative reflection. Aiming to eliminate irritation

or any demotivating action. For example, the idea is that consistency in carrying out a movement will and should be rewarded more than impact reduction. This can be as subtle as freezing the plant's growth over time. But opportunities are there to study more about such matters. Finding the boundaries between motivating and demotivating behaviors in hospitalized patients requires a much deeper understanding of them.

There are three immediate changes that ought to or might be taken into account. To start, the design needs to be more organized to aid users in finding what they're looking for. The location of the important icons needs to be investigated next. To make sure that users behave as the designer anticipates over extended periods of time, more study cases are necessary. As such, it is important to continue researching and testing user feedback to understand their long-term engagement with the application.

Researchers might consider designing with users. Designing collaboratively entails working alongside users at every stage of a project, co-creating solutions, and continuously gathering and incorporating user feedback. Having design sessions with patinas might be just as entertaining for the patinas as they are beneficial for the application's user experience.

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