

Topic: Using mobile phones to present medical information to hospital patients.

Hospital stays can be a stressful time for both patients and their relatives [1] and is worsened by a lack of clear communication about the patient's treatment and length of stay. Within this setting, patients must adjust to unfamiliar hospital routines and cope with mostly verbal information transfer filled with complex terminology and vernacular.

Patient empowerment has become a crucial aspect of improving healthcare outcomes and enhancing patient experiences. By allowing patients to access, control, and share their own health data, individuals are supported to take up an active role in their own healthcare and make informed decisions about treatments [2]. Encouraging patients to seek more information and ask questions during clinical visits has shown reduced anxiety [3], improved compliance [4] with instructions and higher patient satisfaction [5].

The emergence of mobile health (mHealth) applications has opened up convenient access to such information and in response, research in health services, medical informatics, and human-computer interaction has begun to explore new ways to engage and communicate with patients during hospital visits [6,7,8,9,10]. Building on this research, inpatient portals emerge as technological advancement in this domain. Despite the growing area of research, there is still a limited understanding regarding the user-centered design of such portals and applications to meet the specific information and experiential needs of patients during their hospital stay.

Therefore, the objective of work is to explore the development of a mobile health application specifically designed for use by hospital patients. This application aims to address the communication gap by providing accessible and understandable information directly to patients. The focus will be on designing an app that is both informative and user-friendly, catering to the needs of a diverse patient demographic. Therefore, the thesis will investigate patients' information needs during hospital stays and develop a concept for a mobile health application that aims to enhance patients' understanding of their health journey during hospital visits. The concept will be implemented as a prototype.

The proposed work consists of the following parts:

- Conduct literature research on mobile applications that present medical information to hospital patients, examining information needs and design considerations. Focus specifically on internal medicine patients.
- Conduct semi-structured qualitative interviews with a minimum of three potential users of the study app, who have been hospitalized in the last five years. Utilize thematic analysis to identify specific needs and requirements, as well as important topics and features.
- Develop a holistic concept for health and administrative data representation for hospitalized patients and implement the concept within a prototype.

The thesis must contain a detailed description of all developed and used algorithms as well as profound result evaluation and discussion. The implemented code must be documented and provided. An extended research on literature, existing patents and related work in the corresponding areas has to be performed.

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