DECO 3500 Domain Research

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Define the domain

My domain is about health issues, that is, how to enhance the connection and communication between patients and doctors. Under normal circumstances, when people find that their body is unwell, they will choose to go to the hospital to see a doctor. After the patient receives the doctor's treatment, the connection between the patient and the doctor will be disconnected. The patient cannot maintain effective contact with the doctor, which is not conducive to the treatment and recovery of the disease. There are social and mobile issues in this domain. First of all, the patient cannot talk to the doctor in time, which means it has a social issue that lacks dialogue. In addition, the patient can only receive treatment in the hospital, which means that it has a location-dependent mobile issue. Good communication and treatment anytime, anywhere have a positive impact on the health of patients, and information technology may help patients achieve their communication needs.

My research this time focuses on the communication and connection between patients and doctors. In order to concentrate the research, I choose cancer patients or other critically ill patients as my main research objects. Because cancer requires a long treatment process, communication between doctors and patients is extremely important. Through interviews and observations with patients and doctors, we can understand their potential needs and try to solve these problems through information technology.

Critique

Yair G. Rajwan and George R. Kim. 2010. Medical information visualization conceptual model for patient-physician health communication. In Proceedings of the 1st ACM International Health Informatics Symposium (IHI '10). Association for Computing Machinery, New York, NY, USA, 512–516. DOI: https://doi-org.ezproxy.library.uq.edu.au/10.1145/1882992.1883074

Abstract: "Communication between patients and health care providers may require sharing of data and knowledge that is complex and of high-volume. To support communication of these types of information, visualization techniques and tools can reduce cognitive burden in informed patient-centered health decisions and empower patients in their own care. Designing and implementing effective visualization depend on iterative consideration of cognitive needs and tasks of the patient (physical, intellectual, and linguistic), conceptual needs of the communication process (encoding and decoding, shared mental models, and common ground), and pragmatic requirements of care (culture and values) in making health choices. We discuss the evidence, experience, and motivation for a model, the Medical Information Visualization --- Conceptual Model (MIV-CM), to guide the process of patient - oriented visualization design and implementation."

Critique: This paper provides a conceptual model for enhancing the communication between patients and healthcare providers, which can share complex and large amounts of data and knowledge. First of all, the model takes the patient's cognition as the primary consideration, and helps patients understand the concept of health and patient status through visualized visual symbols. For example, we can express the patient's physical condition through different colors. Red usually represents danger and green represents health. This simple and easy-to-understand visual symbols and elements help patients better understand their physical condition. This method helps me to design the problem

space and improve the communication between patients and doctors through easy-to-understand visual symbols. Secondly, the paper mentioned that the complex medical concepts or terminology can be made simple and easy to understand through visualization, and patients can understand the concept of diseases in the form of pictures or animations. I think I can take this into consideration in the design, not only to provide a platform where doctors and patients can communicate, but also to provide patients with videos or pictures to help users better understand concepts and technical terms.

Furthermore, the paper also mentions that patients' needs for medical information include five parts: explanation, directions, alerts & reminders, alternative and status & progress. My design also considers these five parts, so that patients can have a detailed understanding of the disease and get reasonable suggestions. At the same time, patients can know their status in time and be reminded.

Jeana Frost, Nienke Beekers, Bartho Hengst, and Ruud Vendeloo. 2012. Meeting cancer patient needs: designing a patient platform. CHI '12 Extended Abstracts on Human Factors in Computing Systems. Association for Computing Machinery, New York, NY, USA, 2381 – 2386. DOI: https://doi-org.ezproxy.library.uq.edu.au/10.1145/2212776.2223806

Abstract: "Cancer patients have a variety of unmet informational and support needs. Yet to date, online cancer resources only address a small number of these needs. The goal of this project, kanker.nl, is to address the changing needs of Dutch cancer patients for both information and support. Kanker.nl is a novel collaboration between institutions that provide complementary patient services: a major cancer charity, patient organizations and comprehensive care centers. To design a platform that is both innovative and useful to patients, we conducted a series of design research studies with patients including focus groups, interviews and surveys. Results suggest a demand for this type of platform, openness towards sharing medical information anonymously, and the inherent complexity of information searches in this environment. Based on these findings, we present an interactive prototype and proof of concept."

Critique: This paper conducted a series of studies on cancer patients, including interviews, focus groups and surveys. Through the study of patients, the author discovered the needs of patients and the complexity of information search. For my research, I also need to conduct in-depth research on patients, and understand the communication between patients and doctors through interviews, surveys, observations and focus groups. Design based on the results of the research so that the design can solve problems and improve the quality of communication.

The paper also provides a platform that can meet the information and support needs of cancer patients. Users can access the information they want to know, available information and customized information. Research shows that patients need a similar platform, a platform where they can share medical information and insights and the experience of others. In my design, I will consider the needs of users for medical information, and help patients understand and obtain medical information by establishing contact and communication with doctors. At the same time, sharing experience with others is also a way to obtain information. In my design, I will also consider sharing and communication between patients about the condition.

Lauren Wilcox, Rupa Patel, Anthony Back, Mary Czerwinski, Paul Gorman, Eric Horvitz, and Wanda Pratt. 2013. Patient-clinician communication: the roadmap for HCI. In CHI '13 Extended Abstracts on Human Factors in Computing Systems (CHI EA ' 13). Association for Computing Machinery, New York, NY, USA, 3291–3294. DOI: https://doi.org/10.1145/2468356.2479669

Abstract: "Effective communication between patients and their clinicians during clinical encounters has a positive impact on health outcomes. Technology has the potential to help transform this synchronous interaction, but re-searchers are still at early stages of developing interventions to assess and improve patient-clinician communication. In this workshop, we envision opening up a dialogue among researchers and clinicians who wish to discuss directions for future research in this domain. In particular, the workshop will focus on exploring how technologies available today, as well as projected for the future, can support the communication needs of clinicians and patients."

Critique: This paper believes that effective communication between the doctor and the patient has a positive effect on the health of the patient during the visit. The purpose of my domain is to improve the communication effect between patients and doctors, to improve the treatment effect of doctors. The paper mentioned three key communication goals, including clinician awareness of patient symptoms, patient awareness of care activities and shared decision-making. These three goals should be fully considered in my design to help patients achieve these three communication goals. First of all, the paper pointed out in the clinician's understanding of patients' symptoms that symptoms that affect the patient's quality of life are often overlooked during treatment. For example, when a patient suffers from repeated pain, the clinician cannot observe the patient's state including posture and facial expression in real time, which has a negative impact on the treatment effect. Secondly, patient-centered medical consultation abstracts can help patients better comply with nursing advice. The medical summary can record appointment information, medications and nursing events, which improves the patient's awareness of nursing. Finally, when doctors provide patients with different treatment options, patients usually need time to think and make decisions. When the user makes a decision, the clinician is notified in time, which can save treatment time. In my design, I must clearly help patients to solve these communication problems and provide effective help for the treatment of patients.

Sadaf Khurram and Khurram Sardar. 2020. Patient-Centric Mobile App Solution. In Proceedings of the Australasian Computer Science Week Multiconference (ACSW '20). Association for Computing Machinery, New York, NY, USA, Article 42, 1–4. DOI: https://doi.org/10.1145/3373017.3373063

Abstract: "Background: In this era of smartphones, more and more people use mobile apps to help them with daily tasks. While this trend is penetrating the health industry, the mobile apps available are mostly fitness-related or health service provider-centric. Apps to help patients manage their conditions and health records are rare.

Objective: The purpose of this study was to design a mobile app to help cancer patients manage their stressful daily routine and health records during their cancer journey. The

study also investigated ways blockchain technologies can be deployed to ensure data on the app can be stored securely and that ownership of data belongs to the patient.

Methods and Results: A survey and interviews were conducted, and a working prototype was developed based on the features requested by patients and carers.

Conclusion: In this article, a patient-centric app for people dealing with cancer is presented. It was developed as a prototype following pilot research investigating patients' needs and requirements during their cancer journeys. This research paper also analyses the use of blockchain technologies to empower patients to own their health data. Finally, as this is research in progress, we discuss how this study will be advanced and the future work planned."

Critique: The purpose of this paper is to design a user-centric application to help cancer patients manage and record their health records. In the process of interviews and investigations, patients need an application that can help them reduce the pressure on managing their health records. At the same time, with the application of recording health records, doctors can also directly view patients' medical records, which can effectively prevent patients from missing important information such as their own medical history and health records when communicating with doctors. In my design, I will consider adding a health record function to the project, which will help improve communication between patients and doctors. On the one hand, doctors can have a comprehensive understanding of the patient's condition, and on the other hand, patients do not need to worry about missing or unclear description of their medical history.

Protecting patients' privacy and information security is also an important part. Patients have the right to terminate or allow healthcare providers to view their health records. In my design, I will provide users with authorization and termination functions to protect patients' privacy and information.

Shefali Haldar, Sonali R. Mishra, Maher Khelifi, Ari H. Pollack, and Wanda Pratt. 2019. Beyond the Patient Portal: Supporting Needs of Hospitalized Patients. Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems. Association for Computing Machinery, New York, NY, USA, Paper 366, 1–14. DOI: https://doi.org/10.1145/3290605.3300596

Abstract: "Although patient portals-technologies that give patients access to their health information-are recognized as key to increasing patient engagement, we have a limited understanding of how these technologies should be designed to meet the needs of hospitalized patients and caregivers. Through semi-structured interviews with 30 patients and caregivers, we examine how future patient portals can best align with their needs and support engagement in their care. Our findings reveal six needs that existing patient portals do not support: (1) transitioning from home to hospital, (2) adjusting schedules and receiving status updates, (3) understanding and remembering care, (4) asking questions and flagging problems, (5) collaborating with providers and care- givers, and (6) preparing for discharge and at-home care. Based on these findings, we discuss three design implications: highlight patient-centric goals and preferences, provide dynamic information about care events, and design for situationally-impaired users. Our contributions guide future patient

portals in engaging hospitalized patients and care- givers as primary stakeholders in their health care."

Critique: This paper discusses how to increase patient participation, better meet the needs of patients and support their participation in nursing. The paper mentions that patients can add or edit their own goals, combining the patient's health goals with personal goals. In my design, the user can track the health goals provided by the doctor in real time, such as how much water they drink every day, and take a few hours of recovery training. Patients can use the app to understand the advice provided by the doctor and understand their own completion. Through health. Target way to achieve communication between patients and doctors. In addition, the paper also talked about real-time tracking of the patient's test status, for example, when the patient is undergoing a blood test, the patient can understand which stage they are in. In my design, I will consider recording the patient's test records while providing the patient with the results of communication with the doctor. When you get the patient's test results, you can communicate with the patient as soon as possible.

Overview statement

My domain focuses on how to better connect and communicate with patients and healthcare providers, and have a positive impact on the health of patients. I will use the results of my research as a key consideration in my design. First of all, visualization and visual symbols will be used in the design of my meeting to help patients better understand medical concepts or terminology. Secondly, through interviews, investigations, observations and focus groups to better understand cancer patients, and to establish a platform for patients to share medical information and experiences. Then, establish detailed health record data for the patient, including medical consultation summary, medical history, medication and nursing events. Finally, protect the personal information and data of patients so that they have the right to authorize or terminate the right of doctors to view health records.

My goal is to provide patients with an application that can help them communicate better with their doctors. When the user goes to the hospital to see a doctor, the app will help the patient establish contact with the doctor. When patients find that their condition is getting worse or unwell, they can contact the doctor in time. At the same time, the app will help patients record their own consultation summary, health records and health goals, ensuring that patients can understand their situation in real time. They can also choose to provide their own data to the doctor to help the doctor better understand the patient's condition.

CONNECT WITH YOUR DOCTOR

("Better Connect with Your Doctor | GrowAyu," n.d.)

Description

My domain is about health issues, that is, how to enhance the contact and communication between patients and doctors. Normally, when people find that their body is unwell, they will choose to go to the hospital to see a doctor. After the patient receives the doctor's treatment, the connection between the patient and the doctor will be disconnected. The patient cannot maintain effective contact with the doctor, which is not conducive to the treatment and recovery of the disease.

My goal is to provide patients with an application that can help them communicate better with their doctors. When the user goes to the hospital to see a doctor, the app will help the patient establish contact with the doctor. When patients find that their condition is getting worse or unwell, they can contact the doctor in time. At the same time, the app will help patients record their own consultation summary, health records and health goals, ensuring that patients can understand their situation in real time. They can also choose to provide their own data to the doctor to help the doctor better understand the patient's condition.

Statement

Studies have shown that effective communication between doctors and patients has a positive effect on the health of patients during medical visits. The purpose of my domain is to improve the communication effect between patients and doctors, so as to improve the treatment effect of doctors. The paper mentioned three key communication goals, including clinician awareness of patient symptoms, patient awareness of care activities and shared decision-making (Wilcox et al., n.d.). These three goals should be fully considered in my design to help patients achieve these three communication goals .

Outline

For my research, I need to conduct in-depth research on patients and understand the communication between patients and doctors through interviews. Design based on the results of the research so that the design can solve problems and improve the quality of communication. I will interview 10 patients who go to the hospital and doctors in the hospital to understand the potential needs of the patients.

References

Better connect with your doctor | GrowAyu. (n.d.). Retrieved August 22, 2021, from https://www.growayu.com/blog/better-connect-your-doctor#

Wilcox, L., Patel, R., Back, A., Czerwinski, M., Gorman, P., Horvitz, E., & Pratt, W. (nd). Patient-clinician communication: The roadmap for HCI. 2013 , 4.