Communication Barries in Healthcare

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Abstract

Amidst the UK's "super-diversity" due to a surge in immigrants, many non-native English speakers face communication challenges in medical settings, especially in dental care. This research aims to enhance communication between these individuals and UK dentists. Utilizing disease self-checks and oral models, the study identified key challenges and proposed design solutions to improve the dental consultation experience for non-native speakers.

Introduction & Background

There are barriers to communication between non-native English speakers and dentists in the UK. Despite research focusing on doctors' communication methods and medical software aids, patient initiative is still limited. Currently, there is a lack of methods to help patients communicate with doctors other than translation software. Therefore, this study examines how to improve the user experience of non-native English speaking patients communicating with dentists in the UK through interface design.

Stage 1 Requirement Analyse

Semi-structured interviews

Number of participants：10
Non-English speaking patients
Oral diseases
Age range: 20-35

User journey

Based on the interviews, I design the following user journey. During the interviews, it was found that patients encountered many problems in going through consultation, treatment and receiving medical advice.

Phase	Phase 1 -- Register	Phase 2 -- Appointment	Phase 3 -- Consultation	Phase 4 -- Treatment	Phase 5 -- Doctor's order	Phase 6 -- Payment
Stage	Stage 1 -- Find a dental surgery Stage 2 -- Appointment Stage 3 -- Fill in a registration form	Method 1 -- Online Method 2 -- Phone	Stage 1 -- Describe the symptoms Stage 2 -- Inquire the conditions Stage 3 -- Examination	Stage 1 -- Treatment plan Stage 2 -- Start treatment	Stage 1 -- Doctor's order Stage 2 -- Follow-up treatment	Stage -- Payment
Feeling						
Pain Points	• Some hospitals cannot accept new NHS patients, patients need spend a lot of time looking for, can't find it quickly on the webpage. • Some patients have trouble hearing staff because of language barriers. • I don't know the names of many diseases, so I need to look up an electronic dictionary. • Inaccurate translation of some medical terms confuses patients. • Some patients did not fill in carefully because they found the translation troublesome.	• Some patients have trouble hearing staff because of language barriers	• There is no way to describe the disease with precise words. • Using electronic dictionaries or translation software is time-consuming and inaccurate. • Using the nhs dictionary needs to be searched in advance and is time-consuming and inconvenient to understand.	• Doctors have difficulty understanding some professional words. • Real-time translation software was inaccurate due to noise and accents, and translations of medical terms were inaccurate. • Doctors have difficulty understanding some professional words. • Real-time translation software was inaccurate due to noise and accents, and translations of medical terms were inaccurate.	• Patients have difficulty understanding some professional words. • Real-time translation software was inaccurate due to noise and accents, and translations of medical terms were inaccurate. • Patients ignored what they didn't understand and didn't ask the doctor again.	
Opportunity	• The latest available time and whether new users can be accepted can be directly displayed on the home page. • Real-time translation of phone calls.	• Provide an electrical application form for new patients and it could be translated when the patients click the words. • Real-time translation of phone calls.	• Using a 3D model to describe the diseased body parts. Provide some option for patients like the severity, the frequency, the duration and etc.	• Playing explained video for patients.	• Provide patients with instructions on the use of some commonly used drugs, and doctors can adjust the condition of different patients according to the above information.	

Stage 2 Information Architecture(IA)

Tree testing

Number of participants：50
Non-English speaking patients
Oral diseases
Age range: 20-35

Based on the information provided by users, I designed the IA of the app, in order to verify its validity, I tested five tasks related around the functionality, after testing and finding out the problems, I retested and finally adjusted it to the following figure.

Stage 3 Lo-Fi Design

Task-based user testing

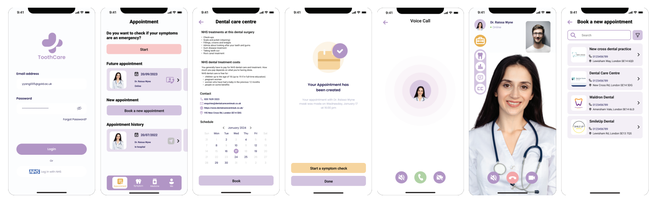
Number of participants：6
Non-English speaking patients
Oral diseases
Age range: 20-35

Based on the IA of the second version, I designed the low-fidelity design of the app, and after task-based user testing, I redesigned the low-fi as follows.

Stage 4 Hi-Fi Design

SUS testing

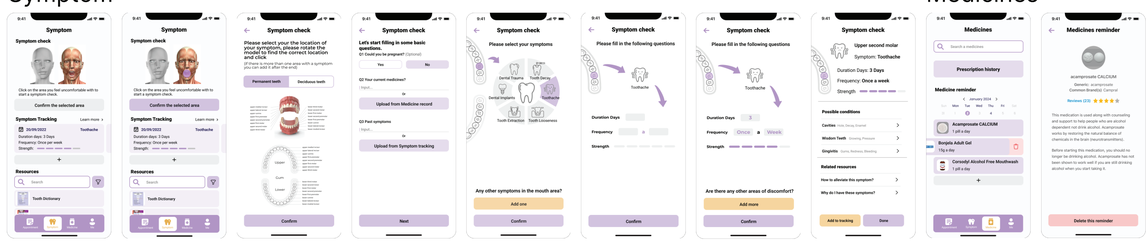
Number of participants：6
Non-English speaking patients
Oral diseases
Age range: 20-35



Log in Appointment

Based on the low fidelity of the second version, I designed the high fidelity using a quantitative usability evaluation method (sus testing) and redesigned the high fidelity based on the suggestions of the testees as shown in the following figures and the right figure.

Symptom



Medicines

Conclusions & Future work

In this project, I research How to improve the user experience of non-native English speaking patients communicating with dentists in the UK through interface design. The current interface primarily facilitates the initial stages of medical consultations, enabling patients to express their symptoms. It is worth noting that in some cases, diagnostic procedures such as X-rays remain the most important for first-time patients. In addition, the reliability and accuracy of symptom-screening procedures deserve further study. My future research direction will be to refine the functionality of the app and evaluate its effectiveness to determine its clinical applicability.