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Idoc A Health Consultation Services In Quirino Province: An Evaluation Of Usability

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ABSTRACT
In the dynamic field of healthcare, providing high-quality care and ensuring that the patient experience is seamless and easy to use has become more and more important. In this domain, particularly in the context of healthcare services, usability evaluation is essential since it emphasizes the usability, efficacy, and ease of use of the instruments, and systems that are utilized by patients as well as healthcare providers. It is further proven that it is advised as an online platform for healthcare consultation services given the findings of the study on the integration and use of mobile applications to address healthcare consultation services in the province of Quirino. To ensure that the IDOC (Innovative Doctor on Call) is actually providing healthcare services for the community, usability research acts as a link between the needs of the users and the technology. The goal of this study is to evaluate the perceived and usability of the mobile healthcare consultation application designed in availing healthcare services in the province of Quirino. In order to evaluate the quality of a mobile application for healthcare consultation services, this study conducted quantitative research, a questionnaire-checklist using Likert scale based on the System Usability Scale (SUS) was administered. Based on SUS results from thirty respondents, after each item was calculated, it was computed with a percentile rank of 90.25 and percentile grade of A+. This depicts that the mobile application for healthcare consultation was acceptable. According to the SUS result, the created mobile application helps the community by meeting their needs for medical consultations, which enhances the province and neighboring provinces' medical healthcare services. It was recommended and has a potential to help patients from rural areas. Such tools could potentially reduce clinician burnout.

KEYWORDS
Mobile application, Healthcare services, Rural area

1. Introduction

In an era defined by rapid technological advancements, the healthcare industry is not immune to the transformative power of innovation. Mobile services available through smart phones are needed because majority of people rely on them for a variety of purposes. The use of health telematics is significantly enhancing patients especially for the aged, children, and those in rural areas. Along with the idea of a mobile internet connection that is available anywhere and at anytime, information and communication technologies have grown quickly[1]. The healthcare sector to seize this chance by providing mobile health that is designed to offer greater role related to the health of the community[1]. The quality and accessibility of healthcare could be enhanced by technology, particularly in environments with low resources[2]. Southeast Asia's (SEA) admirable attempt at a healthcare system struggles to keep up with the shifting demands of an aging population and inadequate healthcare resources[3]. More specifically, telehealth holds the promise of bridging healthcare disparities and disadvantaged groups' heightened vulnerability. Previous research on telehealth in the Philippines was only conducted during the COVID epidemic, which was only practiced in the National Capital Region[4].

Due to the scarcity of nearby hospitals and clinics and other medical facilities, it has been observed that providing healthcare services was in fact a major challenge in the province of Quirino. Mobilization was especially problematic from rural areas in availing healthcare consultation services. There is a

chance to take use of the growing availability of consumer-facing digital gadgets and mobile technologies to enable patients to keep an eye on their own health outside of the hospital[5]. Following a number of in-depth interviews with patients in hospitals, clinics, and rural villages, an empathy map illustrates the difficulties and problems individuals face when trying to access healthcare services. The degree of care needed by the communities cannot be met by the medical facilities that are currently available in the province of Quirino. These factors make it necessary for researchers to create low-cost, simple solutions that can be used everywhere, anytime, and even at home to meet the demands of the population.

The use of mobile technology for the delivery of healthcare support to patients and healthcare providers, has shown a lot of promise. In order to increase access, engagement, and the provision of healthcare services, mHealth is progressively being integrated into current healthcare systems[5].

The utilization of evidence-based medical information, other clinical communications, and other possible references is made possible. The province's issue of providing medical issues will be solved by a mobile healthcare consultation service that will provide to healthcare providers information to monitor patient health condition. Healthcare services are being innovated at this time to better serve Quirinians as well as those in neighboring regions.

In order to comprehend and analyze usability issues in any system or application, usability is a crucial evaluation criterion. Usefulness problems are found by evaluations done with users using System Usability Scale (SUS).

2. Objectives

To ensure that the IDOC (Innovative Doctor on Call) is actually providing healthcare services for the community, usability research acts as a link between the needs of the users and the technology. This study aims to assess how well the mobile healthcare consultation application is regarded and how easy it is to use when seeking medical care in the province of Quirino.

3. Scope and Methodology

The scope of this study is to provide fast healthcare services to patients even to rural area anytime and anywhere. The healthcare application will radically improve the ease access and speed with which healthcare professionals can access, analyse and respond to clinical data of patients. It has direct control on their personal data that is personally encoded by them which includes patients health records, if with comorbidities like diabetes, hypertension, cancer, asthma, chronic kidney disease, liver disease, and if with heart problem. Health indicator includes patients' weight, height, blood sugar, blood pressure, and specify if with allergies. If patients have symptoms, the patient should specify if he/she has fever, cough, shortness of breath, sore throat, colds, weakness/fatigue, myalgia, headache, anosmia, anorexia/nausea/vomiting, diarrhea and may specify if not included in the list. It also includes COVID vaccination records of the patient. After data collection, patient can have appointment with available Doctor, inbox for confirmation of appointments by the Doctor available will notify the patient.

Quantitative research design using survey questionnaire of Sytem Usability Scale (SUS) was administered among 30 respondents which comprise It experts, medical practitioners and from the rural areas from Quirino Province. The respondents explore the mobile application for healthcare services application (IDOC) before evaluating the mobile application through SUS questionnaire.

The data acquired from the respondents of Quirino province's six municipalities and others from medical field takes raw score and generate percentile ranks and was graded from A+ to F. To calculate the SUS score, first sum the score contributions from each item. Each item's score contribution will range from 0 to 4. For items 1,3,5,7,and 9 the score contribution is the scale position minus 1. For items 2,4,6,8 and 10, the contribution is 5 minus the scale position. Multiply the sum of the scores by 2.5 to obtain the overall value of System Usability (SUS). The overall value indicates if the said mobile application is recommended or not.

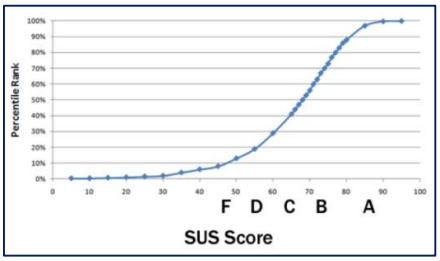

Figure 1. Graph above shows how the percentile ranks associate with SUS scores and letter grades.

4. Literature Review

The use of mobile communications to track people's health is one way that technology is currently influencing the growth of health systems in many developing countries. According to Ventola, C. Lee. (2023). In many developing countries, the way healthcare is provided has been completely transformed by technology. The adoption of ICT in healthcare, particularly the use of mobile technology-based health care services, has improved access to and affordability of healthcare. Promoting the use of more affordable, portable, and effective mobile healthcare delivery—particularly during emergencies and pandemics. However, because access to these kinds of healthcare services is one of the problems in the province of Quirino, the focus of this kind of service delivery platform has been mostly on rural areas.

5. Result and Discussion

After letting the residents from different municipalities, IT experts and other on medical field explore and evaluate the mobile application for healthcare services. The researcher let them answer the System Usability Scale (SUS) questionnaire.

Each item was calculated, and it was computed with a percentile rank of 90.25 and percentile grade of A+. This depicts that the mobile application for healthcare consultation was acceptable and is recommended to deploy.

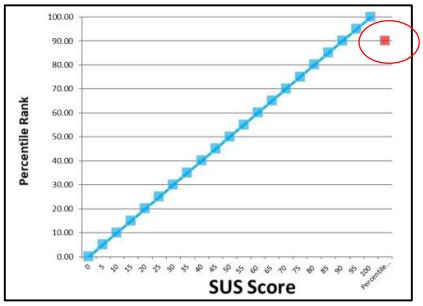

Figure 2. Graph above shows the percentile rank associate with SUS score

System Usability Scale Questions	Mean	Descriptive rating
Q1 I think that I would like to use this system frequently	4.63	Strongly Agree
Q2 I found the system unnecessarily complex	1.47	Strongly Dis-agree
Q3 I thought the system was easy to use	4.40	Strongly Agree
Q4 I think that I would need the support of a technical person to be able to use this system	1.30	Strongly Dis-agree
Q5 I found the various functions in this system were well integrated	4.60	Strongly Agree
Q6 I thought there was too much inconsistency in this system	1.27	Strongly Dis-agree
Q7 I would imagine that most people would learn to use this system very quickly	4.77	Strongly Agree
Q8 I found the system very cumbersome to use	1.17	Strongly Dis-agree
Q9 I felt very confident using the system	4.63	Strongly Agree
Q10 I needed to learn a lot of things before I could get going with this system	1.53	Strongly Dis-agree

Table 1. Mean result for every question in SUS questionaire.

The table above shows the SUS result among 30 respondents mean average for every question on SUS questionnaire. Questions 4 and 10 provide the learnability dimension which depicts that in using the mobile application, respondents does not need technical assistance in using the system. Questions 2, 6 and 8 shows the usability where result depicts that the mobile application was not difficult to use. . Questions 1,3,5,7,9 has a descriptive rating of "Strongly agree", this depicts that respondents find the mobile application very useful. The SUS result also shows that user does not need to learn more about technology to be able to use the mobile

healthcare application. Feedback identified changes that may improve the mobile app usability for patients and medical providers where perceptions of app usefulness focuses core needs of the patient and Doctors workflow while managing the app. From SUS results from thirty respondents, after each item was calculated, it was computed with a percentile rank of 90.25 and percentile grade of A+. This depicts that the mobile application for healthcare consultation was acceptable and in recommended for deployment.

Figure 3. Pictures during evaluation of IDOC

6. Findings

The overall usability results of the IDOC mobile application for healthcare consultation gained percentile rank of 90.25 and a percentile grade of A+. This depicts that the mobile application for healthcare consultation was acceptable. The SUS result shows that the developed mobile application is beneficial to the community to meet their needs in availing healthcare consultation to improve medical healthcare services of the province and nearby provinces. It was recommended and has a potential to help patients from rural areas. Such tools could potentially reduce clinician burnout.

7. Limitations and Research Gaps

The limitation of the mobile healthcare struggle to sustain annual operation. Patients cannot view personal records of healthcare providers. And the mobile application will not function without internet. Even while remote patient monitoring has become more popular, there is still a lack of resources for managing long-term illnesses like diabetes, high blood pressure, or asthma via a mobile app. Current solutions frequently have unintuitive user interfaces or don't give patients useful information. The elderly, those with impairments, and those from low-income backgrounds are just a few of the various demographics that many healthcare apps are not made to serve. Problems include limited access to technology, inadequate support for multiple languages, and poorly designed user interfaces.

8. Conclusion

The purpose of this study is to evaluate the usability of mobile applications for health care consultation services in the province of Quirino. It is further attested that the usability of mobile application in healthcare consultation services can be recommended and can be employed. It is advised to use this technology for healthcare consultation to raise patient knowledge of health issues, monitor their condition, and give them assistance and education. When combined with in-person interventions, digital interventions will be inexpensive and quite simple for public health agencies to deploy. This mobile application can help low-income individuals who may not have consistent access to high-quality healthcare consultation and may struggle with access to in-person preventive health services owing to transportation challenges, lack of childcare, and other barriers. The given result using System Usability Scale (SUS), it positively provides the researcher an in-depth idea that the said mobile application is recommended and will support the government ease the challenges of healthcare services in the province and is beneficial to all Quirinians and to nearby province.

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