

Evaluation of a Mobile Application Tool to Assist Health Care Providers in Cardiovascular Risk Assessment and Management

Monica Zolezzi¹, Lead Principle Investigator

Research Team: Athar Elhakim², Yazid Alhamarneh³, Lily Yushko³, Taimaa Hejazi¹, Lana Kattan¹, Dana Mustafa¹, Shimaa Aboelbaha¹, Shorouq Homs¹

¹College of Pharmacy, Qatar Health, Qatar University, Doha, Qatar

² College of the North Atlantic, Doha, Qatar

³ University of Alberta, Alberta, Canada

Background

Cardiovascular disease (CVD) is the leading cause of death worldwide. Over the past two decades, it has been recognized that in order to decrease the burden associated with CVD, it is necessary to shift the focus from treatment to prevention..

The World Health Organization (WHO) has recommended a comprehensive CVD risk assessment and management (RAM) approach away from the traditional management of risk factors in isolation. Unfortunately, this approach has been challenging to implement in the community. Mobile technology offers the opportunity to improve and overcome some of these challenges.

EPIRxISK™ CVD risk calculator provides an individualized and interactive process to estimate CVD risk based on a person's risk factors and comorbidities. EPIRxISK™ uses three validated risk equations (Framingham, UKPDS and SMART) to estimate CVD risk, and is available on the web and as a mobile application.

The interactive CV risk calculator was developed at the EPICORE Centre, University of Alberta, Edmonton, Canada.

Study Objectives

To pilot test the English (Figure 1a) and Arabic (Figure 1b) versions of the EPIRxISK™ CVD risk calculator.

Methods

This pilot study involved two key phases: Phase 1 focused on the translation of the EPIRxISK tool into Arabic, and Phase 2 focused on pilot testing the web and mobile application with pharmacists and individuals accessing community pharmacy services.

Participants' feedback regarding the EPIRxISK™ tool was sought through a qualitative interview and analyzed using inductive thematic analysis. The data collection procedure is illustrated in Figure 2.

Ethical approval: Qatar University Institutional Review Board (QU-IRB) : QU-IRB 1298-EA/20.

Figure 1a. EPIRxISK Mobile Application (GP's) English Version

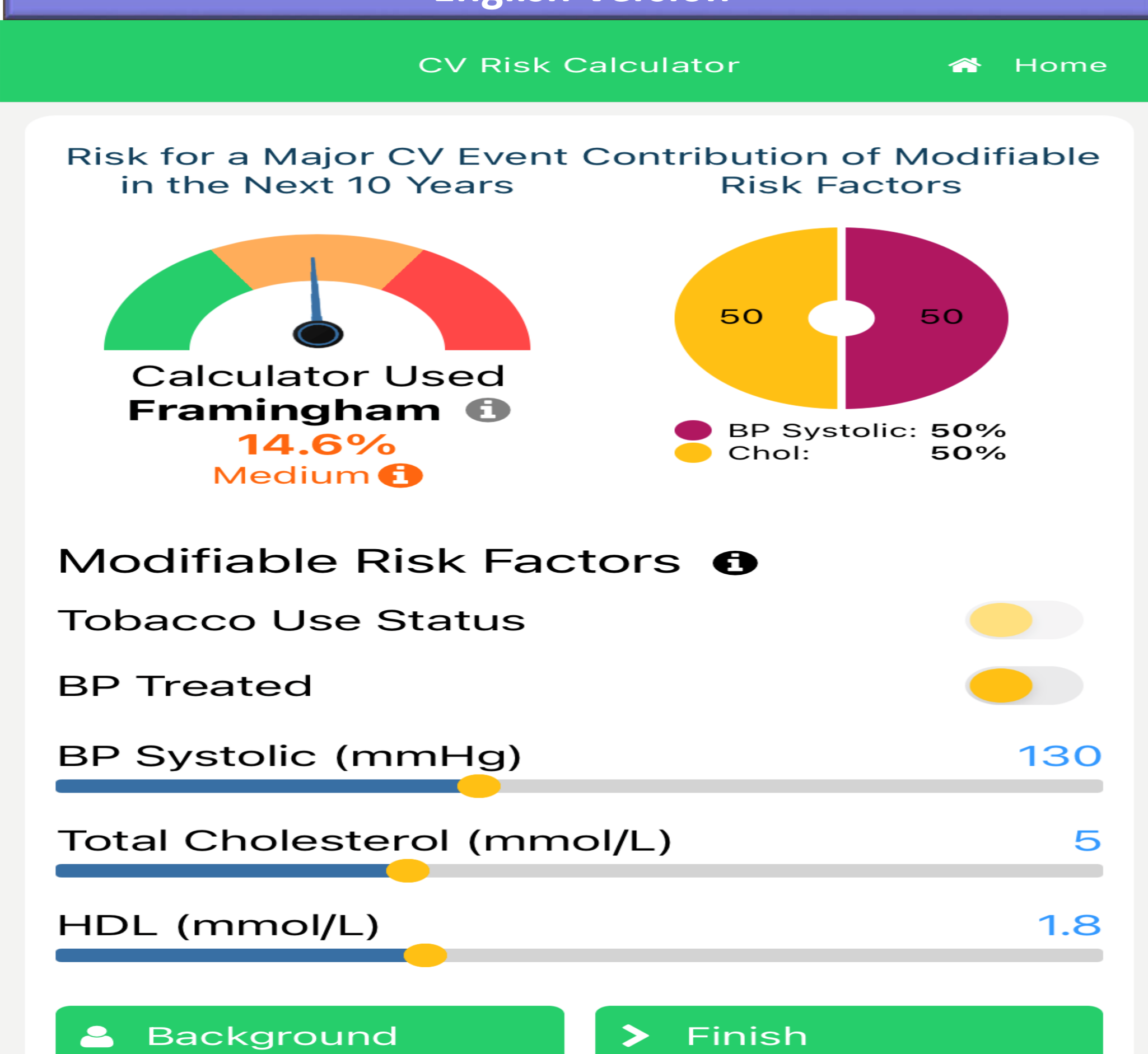
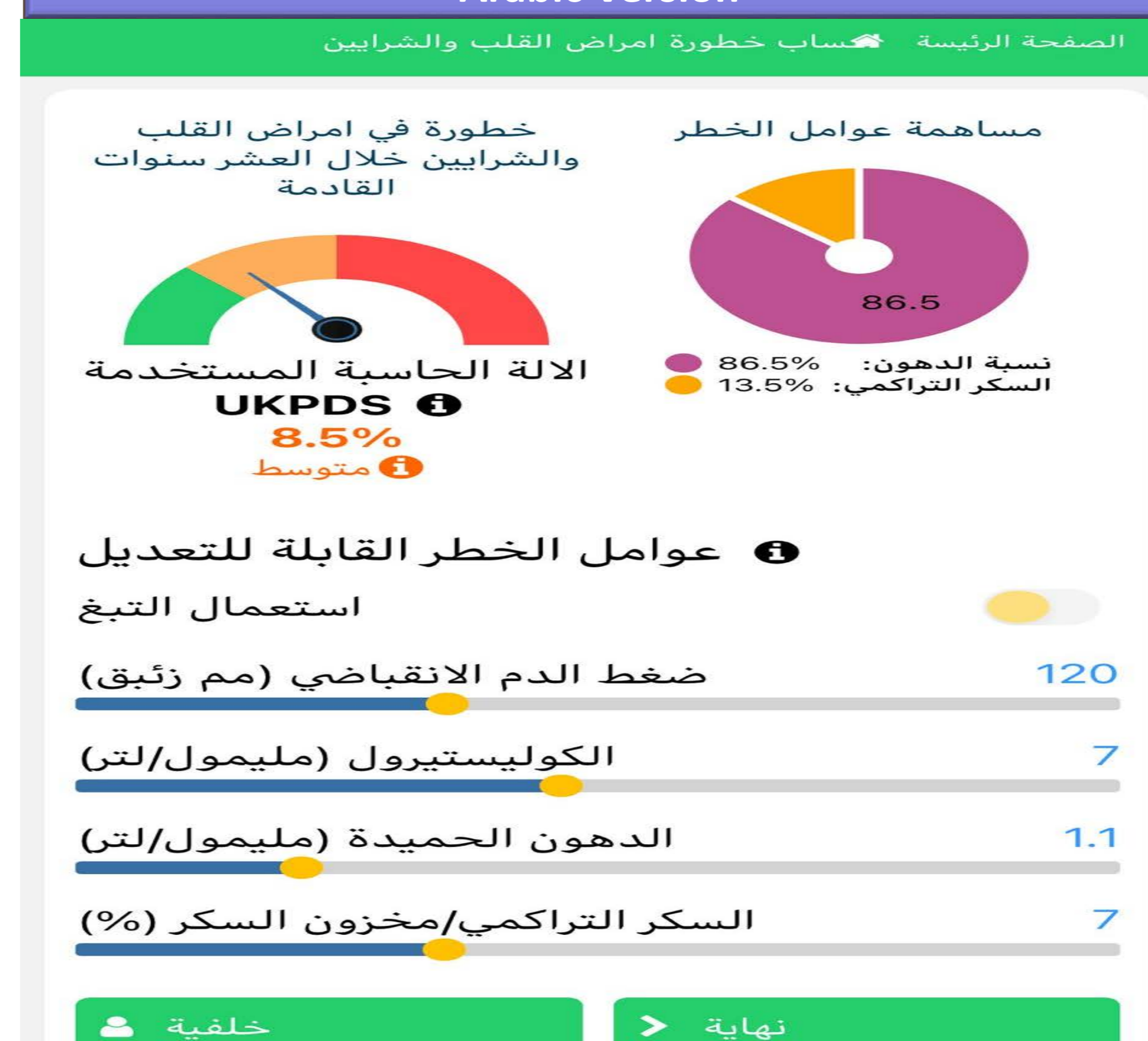


Figure 1b. EPIRxISK Mobile Application (GP's) Arabic Version



Results

- A total of 9 community pharmacists and 5 individuals from the general population (GP) were interviewed.
- As described in Table 1 and 2, five major themes emerged from the interviews. Important quotes include (edited):
 - It was very good, the patient history can be recorded to obtain the CVD risk then target the risk factors. (Pharmacist)
 - The information required by the application is easy to know. It will highlight what you need to do (individual from the GP)
- The results are indicative of an overall acceptance and satisfaction with the features of the EPIRxISK™ application.
- Barriers for adoption and implementation were mostly in relation to the time required by the users.

Table 1. Emerging Themes from Pharmacists' Interviews

Framework	Theme
Engagement	High interest due to the presence of sufficient content
Functionality	Good functionality in terms of high performance and accuracy
Aesthetics	High level of visual appeal
Information	Comprehensive, clear and concise information
Subjective Quality	Frequent use, high rating, and willingness to recommend to relevant population

Table 2. Emerging Themes from GPs' Interviews

Framework	Theme
Engagement	Interesting and engaging content
Functionality	Accurate and user friendly
Aesthetics	Simple and professional layout
Information	Contains thorough and important information
Subjective Quality	High rating and willingness to use and recommend to relevant population

Limitations

- Time consuming in busy community pharmacies.
- Restrictions and precautionary measures related to COVID-19 pandemic may impact the feasibility of implementing this application since CVD patients are at an increased risk of complications.
- Certain patients may not be fully comfortable with spending time sharing private data and information about themselves, especially in the absence of a private space in community pharmacies.

Conclusion

- This study has provided preliminary evidence to suggest that the EPIRxISK™ application is both acceptable and feasible to assist health professionals in providing CVDRAM services.
- Based on these positive pilot findings, a follow up study is currently being conducted to further assess the feasibility of using the EPIRxISK™ tool in community pharmacies as well as in primary health care centers in Qatar.
- The results of the follow up study will also enable the validation of the Arabic version of the EPIRxISK tool and help to improve access to CVD preventive services to address Qatar's national health priorities and the WHO's goal of reducing CVD-related morbidity and mortality.