

Extended Abstract

SmartMY – An Easy-access Medication Price Checker Mobile Application Prototype

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ABSTRACT

The rising cost of generic and brand-name medications have raised concerns about affordability and accessibility. In Malaysia's private healthcare system, individuals may face high out-of-pocket expenses, necessitating a reliable pricing guide. However, no existing mobile application provides convenient access to medication prices. SmartMY was developed as a user-friendly mobile app to enhance public access to recommended retail medication prices. Built on the AppSheet platform, it integrates retail price data from the Pharmaceutical Services Programme, Ministry of Health (MOH) Malaysia. The application interface was designed to facilitate a pricing search capability using the generic name, brand name, or medication registration number. The information provided includes the retail price per unit and per pack of the medication. The pricing within the application serves as a guide for retail prices. The users may also provide feedback for the continuous improvement of the application. An intuitive mobile application for a medication retail price guide was designed and developed. This application serves as a useful tool for the public to readily access and compare medication prices, promoting transparency and informed decision-making when purchasing medications. With regular updates and user feedback, the application aims to provide accurate and up-to-date information for users seeking affordable healthcare options. In the future, the application seeks to augment its functionality by incorporating a price comparison feature that enables users to compare medication prices from different community pharmacies.

Keywords: mobile application, medication, price

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1.0 Introduction

The cost of medications, which constitutes a significant portion of health expenditure, has increased throughout the years. In developing countries, particularly those with a prominent presence in the private health sector, most of the public purchases medications through out-of-pocket payments (1). Both generic and originator medications' prices were shown to have substantial price markups (1,2). This raises issues about the affordability and accessibility of medicines among the public. Low medication affordability may hinder public access to high-quality pharmaceutical care.

In the dual healthcare system in Malaysia, some individuals may seek medications from private health sectors such as community pharmacies and private hospitals. With various options to acquire their medications from the private healthcare sector, a medication pricing guide would be a valuable tool to help them make informed purchases.

To date, no mobile application in Malaysia provides convenient access to medication pricing. Thus, this study aims to develop a mobile application prototype (*Semak Harga Ubat*, SmartMY) for a medication price checker to assist the public in their medication purchasing decisions.

2.0 Innovation

SmartMY was developed through the AppSheet platform. With the first click of the mobile application, the user will be brought to the "About" page, which introduces the application and provides brief information on its terms. The application integrated medications' retail price data from the Pharmaceutical Services Programme, Ministry of Health (MOH) Malaysia into the platform (3). A search functionality was built in which the users can find the price using a medication's generic name, brand name, or registration number (Figure 1). The mobile

application provides essential pricing information, including the retail price per unit and per pack of the medications. Additionally, a feedback feature was incorporated to allow users to offer suggestions for continuous improvement, enhancing the application's functionality and ensuring it remains updated with user needs.

SmartMY prioritises data security and privacy by ensuring that no personal or sensitive health data is collected from users. The app functions solely as a price-checking tool, utilising publicly available pricing data from the MOH Malaysia. Future versions of the application may incorporate encryption protocols to safeguard data and implement secure Application Programming Interface (API) access to facilitate protected interactions with external databases, should additional functionalities be introduced.

3.0 Uniqueness

SmartMY is the first mobile application in Malaysia designed to cater to the need for a medication price checker. With its user-friendly and intuitive interface, SmartMY enables the public to quickly check retail medication prices as recommended by the product registration holders. Moreover, the feedback feature allows for continuous application enhancement, addressing the users' needs. This innovative application empowers consumers by providing transparency in medication pricing, ultimately helping them make informed decisions about their medication purchases. By incorporating user feedback, SmartMY can adapt and evolve to better serve the needs of its users, ensuring a seamless experience.

4.0 Commercialisation Potential

SmartMY addresses the growing need for medication price transparency and comparability. Malaysia possesses a substantial consumer market of community

pharmacies and private hospitals where out-of-pocket payment is required (4).

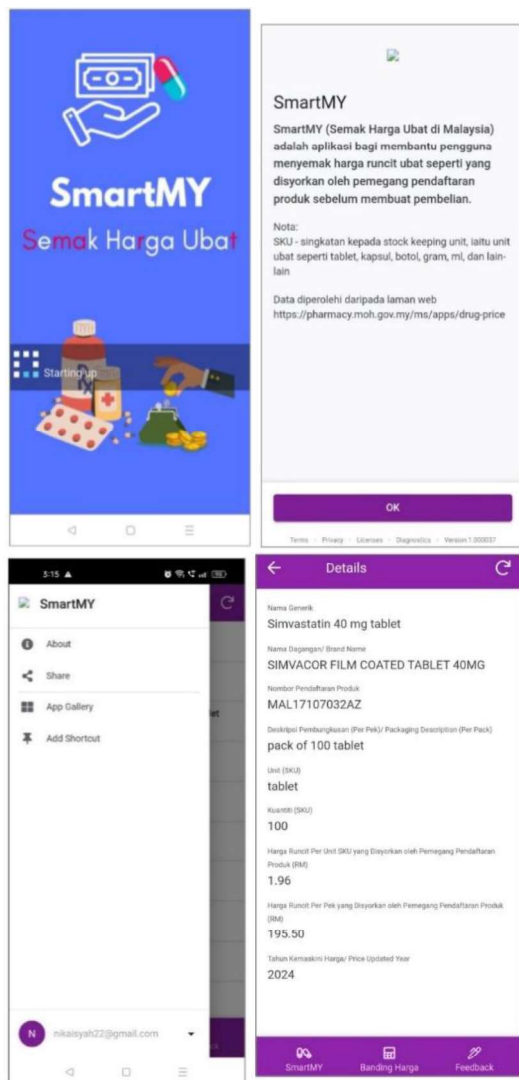


Figure 1: Interface in the SmartMY mobile application.

They will be the target users for this mobile application. Additionally, SmartMY has a huge potential for functionality enhancement, such as a price comparison feature among different community pharmacies and private hospitals. This facilitates partnerships with the private healthcare sector, including insurance companies. Moreover, a premium subscription can provide additional features such as medication refill reminders.

5.0 Impact on Quintuple Helix

SmartMY enhances accessibility to affordable healthcare by empowering the public with medication price information. This also ensures equitable access to high-quality healthcare. This innovation leverages data from the Ministry of Health, Malaysia, to bolster the government's quality use of medicines initiative, in accordance with Malaysia's National Medicines Policy. Academically, this innovation may provide valuable insights into consumers' medication purchasing trends and medication affordability.

Additionally, this mobile application promotes healthy price competition within the private healthcare sector. Community pharmacies and private hospitals may modify their pricing strategies to align with consumer expectations and market competitiveness, ultimately benefiting patients as the primary stakeholders in healthcare. In the long term, hospitals and pharmacies may gain from heightened consumer engagement, as price transparency can foster trust between healthcare providers and patients. Pharmacies and hospitals can enhance patient satisfaction while maintaining business sustainability in a more transparent marketplace.

6.0 Conclusion

SmartMY is a valuable tool for the public to conveniently access the recommended retail medication prices, promoting informed decision-making when purchasing medications. The availability of this mobile application has the potential to influence prescribing patterns. Physicians may increasingly consider patients' financial capacity when recommending treatment options, particularly for individuals from lower-income groups. This enhanced price transparency could facilitate more cost-conscious prescribing practices, potentially

improving access to essential treatments. Future studies aim to augment its functionality by incorporating a price comparison feature that enables users to compare medication prices from different community pharmacies.

Authorship contribution statement

NANNMS: Data analysis, Methodology, Formal analysis, Writing—original draft. **NANNMS:** Visualisation, Methodology, Writing – review & editing. **NAI, SA:** Visualization, Resources, Draft corrections. **NANNMS, NAI, SA:** Supervision, Funding acquisition, Writing – review & editing.

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Conflict of Interest

The authors declared that they have no conflicts of interest to disclose.

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