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YST020 - DESIGN & USER EXPERIENCE ASSESSMENT OF A MOBILE APPLICATION PROTOTYPE FOR DOCUMENTATION OF MEDICATION RELATED PROBLEMS AMONG UNDERGRADUATE PHARMACY STUDENTS (DREAMS-STUDY)

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ABSTRACT

The ability to identify, prevent and solve issues related to the ineffectiveness and unsafe use of medications is a core competency in pharmacy practice and these issues are referred to as Medication-Related Problems (MRPs). Such competency starts with good practice of MRP documentation. At present, the learning materials for this critical skill rely heavily on paper-based documentation that is fragmented and lacking real-time support during clinical clerkship which hinders the development of structured clinical reasoning among students. To address this, Rx LogPro, a mobile-based application prototype, was developed to integrate documentation, embedded clinical references, and interactive visual tools to guide students through the MRP documentation process. Using the User-Centered approach, the prototype transforms documentation from a routine, burdensome task into a reflective and educational experience. By aligning with modern learning preferences and the realities of clinical practice, Rx LogPro not only redefines how clinical pharmacy documentation is taught but also streamlines the documentation process and empowers students with confidence and competence in planning for patient medication plans. This innovation seeks to demonstrate how digital platforms can shift the educational paradigm hence making clinical experience more intuitive and future-ready.

Keywords: *digital innovation, mobile health, MRP documentation, pharmacy education, student-centered learning*

INTRODUCTION

Identifying and documenting medication-related problems (MRPs) during clinical clerkship is a challenging yet essential skill for pharmacy students. Effective learning requires consistent, standardised tools to guide MRP classification and prioritisation. Current paper-based documentation is fragmented, requiring students to switch between

different documents, which reduces time for understanding the treatment regimen, and increases the likelihood of mistakes from multiple transcribing of information (Biswas & Talukdar, 2024) thus limiting their practical experience and overall confidence in proposing individualised patient medication plans. Our unpublished data from a recent project on pharmacy documentation revealed that, documenting MRPs using multiple forms is often labour-intensive (Hizwani Azahar, 2024) for both students and practitioners. In parallel, mobile phones have become an integral part of students' daily lives, making them an ideal platform for educational tools (Chan & Fung, 2020). The Rx LogPro is an innovative mobile application prototype developed to address this gap by providing a structured, student-friendly platform for documenting MRPs during clinical clerkship. It integrates core clinical tasks into a single digital interface and, most importantly, it embeds standardised MRP classifications and clinical intervention prompts. This digital shift not only improves documentation efficiency but also supports the development of future-ready pharmacists equipped to deliver safe, effective, and patient-centered care.

OBJECTIVE

- i. To develop a mobile application prototype that integrates structured templates, embedded clinical references, and visual tools tailored to the needs of pharmacy students during clinical clerkship
- ii. To explore students' perception on the impact of the prototype on their efficiency in understanding and completing MRP documentation during clinical clerkship training.

DESCRIPTION OF THE PROJECT

As shown in Figure 1, Rx LogPro uses the Loveable AI platform to provide secure access for patient confidentiality, embed clinical references that simplify MRP identification for students, and offer structured documentation templates. These features also reduce time spent on repetitive entry of patients' medical and medication histories.

The main features of this app are as follows:

- **MRP Decision Tree template (step-by-step MRP documentation):** Rx LogPro introduces a structured decision tree-based templates designed to guide pharmacy students through step-by-step process of documenting MRPs. These templates provide predefined layouts that capture critical components of MRP, including the type and cause of the MRP, recommended pharmacy interventions, and anticipated treatment outcomes. The templates use dropdown menus with contextually relevant options that support the students in making clinically sound and case-specific decisions. Such features enhance the quality, consistency, and clinical reasoning involved in MRP documentation, as illustrated in Figure 2.
- **MRP Statistical Report:** Rx LogPro automatically tracks and aggregates the number of MRPs documented by each student, generating a visual summary of their clinical documentation performance. This feature enables clinical preceptors to monitor students' progress in identifying and characterising MRPs across various clerkship rotations as shown in Figure 3.

To support its impact, students who have used the Rx LogPro were invited to voluntarily provide feedback through qualitative in-depth interviews using probes adapted from the User Experience Questionnaire (UEQ) (Schrepp, 2015).

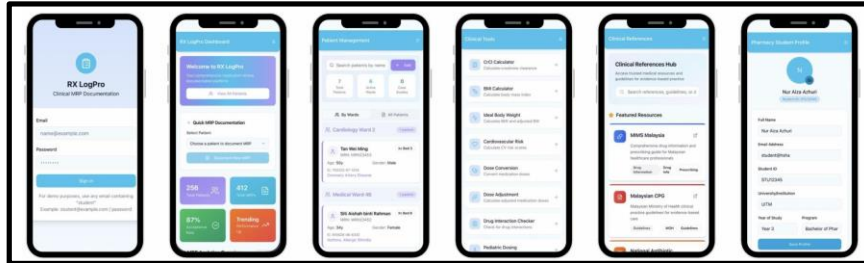


Figure 1: Rx LogPro User Interface

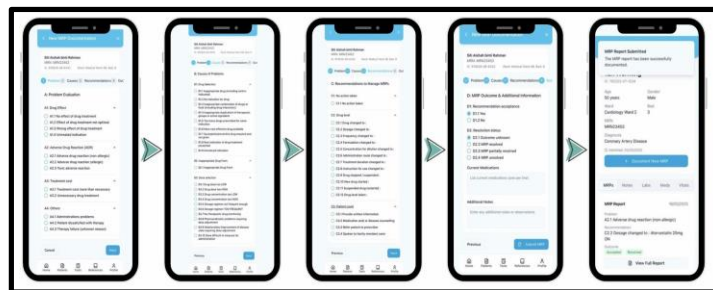


Figure 2: Step by step MRPs documentation templates in Rx LogPro

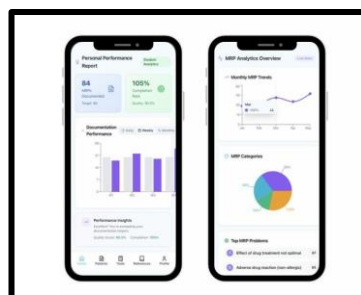


Figure 3: MRP Statistical Report in Rx LogPro

NOVELTY

Rx LogPro is the first locally developed mobile platform to integrate documentation, review, and reflection of medication-related problems (MRPs) into pharmacy students' clinical clerkship training. Unlike conventional drug reference applications, this innovation is aligned with the local pharmacy curriculum and employs a novel MRP decision tree for structured, step-by-step documentation of MRP types, causes, recommendations, and outcomes. It also integrates decision-support tools, enhancing both student learning and preceptor feedback, and positioning it as a transformative solution for future-ready pharmacy education. Feedback was gathered from 16 pharmacy students, with 93.8% reporting improved efficiency in understanding and completing MRP documentation during

clinical clerkship. All participants gave positive feedback across key domains, including Attractiveness (S5: design minimalist, senang cari info), Dependability (S9: suka ada security login), Stimulation (S8: valuable for clerkship), and Novelty (S5: tiada lagi app yang macam ni).

CONCLUSION

Rx LogPro transforms MRP documentation into a streamlined, mobile-first learning experience that builds confidence, accuracy, and clinical reasoning for future-ready pharmacists. Its user-centered design bridges theoretical knowledge and practical application, offering a scalable solution to modernise pharmacy education and practice.

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