



Symptom-Tracking Application for Psoriasis Patients: Version 2

Nathanon Jaranayothin¹, Theepop Wisarnthammakorn¹, Pasin Sakrak¹, Sirikwan Nuphuti^{1*} and Apasri Chumchuen^{1*}

¹Princess Chulabhorn Science High School Trang, Bang Rak, Mueang Trang, Trang, 92000 Thailand

*E-mail: apasri@pcshstrg.ac.th

Abstract

This research aims to develop and evaluate the effectiveness of version 2 of a psoriasis symptom-tracking application. This study presents the development and clinical evaluation of a cross-platform mobile application (Version 2) designed for psoriasis symptom tracking, aiming to overcome the precision limits and latency of its predecessor. Developed using Dart and the Flutter framework, the system leverages a Firebase real-time database to ensure immediate data synchronization. The application integrates three core modules: a self-assessment form utilizing a slider UI for Body Surface Area (%BSA) estimation alongside the Dermatology Life Quality Index (DLQI); an analytical dashboard visualizing symptom trends; and a secure chat system featuring keyword-based automated triaging coupled with teleconsultation and postal medication delivery. A 2-month randomized controlled trial was conducted with 60 moderate-to-severe psoriasis patients at the Southern Regional Institute of Dermatology, split equally into a control group (standard care, n=30) and an experimental group (app-assisted care, n=30). The experimental group demonstrated a statistically significant reduction in mean %BSA from 28.0% to 8.4%, remarkably outperforming the control group, which only decreased from 26.3% to 21.3%. Technical evaluations confirmed high computational efficiency, real-time data processing accuracy, and excellent user satisfaction scores. In summary, this research represents a remote healthcare initiative that enhances access to remote public health services and serves as a telemedicine model capable of being scaled up to manage other chronic diseases.

Keywords: *Psoriasis*, Application, Database, Remote Health Care