

INNOVATION COMPETITION IC2

Mobile Application (SCOSCREEN) for Early Screening of Adolescent Idiopathic Scoliosis

Rachel Priyasheny Thomas^{1,2}, Asfarina Zainudin¹, NorShita Mat Nayan³, Nor Azura Azmi¹

¹ Physiotherapy Programme, Centre for Rehabilitation and Special Needs Studies, Faculty of Health Sciences Universiti Kebangsaan Malaysia, Jalan Raja Muda Abdul Aziz, 50300 Kuala Lumpur, Malaysia

² Unit Fisioterapi, Klinik Kesihatan Cheras Jalan Yaacob Latiff, Cheras 56000 Kuala Lumpur, Malaysia

³ Ir 4.0 Institute Universiti Kebangsaan Malaysia Bangi, 43600 Selangor, Malaysia

ABSTRACT

Description: ScoScreen is a mobile application developed as a screening tool to detect Adolescent Idiopathic Scoliosis (AIS) early. This m-Health innovation provides a digital platform for early spinal curvature screening. **Needs:** AIS accounts for approximately 90% of scoliosis cases, and its prevalence has been increasing in Malaysia. Currently, scoliosis screening is not mandatory in Malaysia due to constraints involving cost, manpower, and psychological factors. Furthermore, existing validated applications are not accessible in Malaysia and lack the Adam Forward Bending test (AFBT) in it. ScoScreen addresses this gap by offering an easier, cheaper approach that encourages individual and family engagement in self-care. **Unique Features:** The application uniquely integrates both the AFBT and a built-in scoliometer. It provides step-by-step virtual and written instructions and is a validated, reliable tool equivalent to a traditional physical scoliometer. Additionally, it is a Malaysian application designed to be culturally sensitive and suitable for primary healthcare settings. **Impact:** ScoScreen facilitates early detection and allows for continuous long-term monitoring. It acts as a user-friendly, cost-effective strategy that optimizes human resource allocation and gives users greater confidence in screening results. **Prospects for commercialization:** The application demonstrates high market demand among parents, schools, and healthcare providers. It is highly scalable, easily distributed without additional costs, and has strong potential for global reach and continuous development due to widespread smartphone usage.

Keywords: Adolescent Idiopathic Scoliosis; Mobile Application; Screening Tool; m-Health; Scoliometer

Corresponding Author:

Rachel Priyasheny Thomas

Email: rachel.p@moh.gov.my