

## **A Randomised Controlled Trial on the Nurse-Led Smartphone-Based Self-Management Programme for Type 2 Diabetes Patients with Poor Glycemic Control**

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**Abstract :** Over the past decades, Asia has emerged as the 'diabetes epicentre' in the world due to rapid economic development, urbanization and nutrition transition. There is an urgent need to develop more effective and cost-effective care management strategies in response to this rising diabetes epidemic. This study aims to develop and compare a nurse-led smartphone-based self-management programme with an existing nurse-led diabetes service on health-related outcomes among type 2 diabetes patients with poor glycemic control in Singapore. We proposed a randomized controlled trial with pre- and repeated post-tests control group design. A total of 128 type 2 diabetes patients with poor glycemic control will be recruited from the diabetes clinic of an acute public hospital in Singapore through convenience sampling. Study participants will be either randomly allocated to the experimental group or control group. Outcome measures used will include the 10-item General Self-Efficacy Scale, 11-item Revised Summary of Diabetes Self-care Activities, and 19-item Diabetes-Dependent Quality of Life. Data will be collected at 3-time points: baseline, three months and six months from the baseline, respectively. It is expected that this programme will be an alternative offered to diabetes patients to master their self-care management skills, in addition to the existing diabetes service provided in diabetes clinics in Singapore hospitals. Also, the self-supporting and less resource-intensive nature of this programme, through the use of smartphone app as a mode of intervention delivery, will greatly reduce nurses' direct contact time with patients and allow more time to be allocated to those who require more attention. The study has been registered with clinicaltrials.gov. The trial registration number is NCT03088475.

**Keywords :** type 2 diabetes, poor glycaemic control, nurse-led, smartphone-based, self-management, health-relevant outcomes

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