

Smartphone-Based Health Program for Improving Physical Activity and Tackling Obesity for Young Adults: A Systematic Review and Meta-Analysis

Global levels of physical activity (PA) are below international recommendations outlined by the World Health Organization (WHO), with dire implications for the prevalence of non-communicable diseases, including overweight and obesity. In part, technical advances and the use of smartphones can be attributed to physical inactivity with a shift in the way we work, live at home, travel, and more recently even how we access health care services. This study intended to identify the effects of smartphone-based health intervention programs provided for young adults on health outcomes, including PA promotion.

It also identified the essential factors contributing to the success of such interventions. Studies to date have not focused on young adults (19-36 years old), with variable results. Given the difference between mobile health and smartphone-based interventions, it is also useful to identify whether intervention strategies using smartphones can influence health results (exercise levels, body weight, BMI).

The study included 5 papers, reporting randomised control trials/quasi-experimental design studies in the analysis. The interventions consisted of lifestyle interventions, personalised education and coaching to promote physical activity, dietary counselling, and health behaviour-related education that was delivered via text message, email, phones, or mobile health devices. The advantages were 2-fold. Firstly, the relatively low cost and ease of scalability of such programs. Secondly, the efficacy for individuals who have difficulty traveling back and forth between doctors' visits due to their excess weight. The meta-analysis identified that smartphone-based health interventions increase PA levels and contribute to healthier dietary behaviours (intake of fruits, reduced consumption of sugar-sweetened beverages).

Future studies should measure the amount of PA conducted more directly and investigate how perceived attitudes to exercise change throughout the intervention duration. In the long-term, it will also be important to assess whether these lifestyle modifications will be sustained.

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