

Family-based intervention using face-to-face sessions and social media to improve Malay primary school children's adiposity: a randomized controlled field trial of the Malaysian REDUCE programme

ABSTRACT

Background: Social media may be an effective medium by which parents could be trained to promote healthy eating behaviour and physical activity for their children. This trial evaluates the effectiveness of a family-based intervention using social media in combination with face-to-face sessions - the REDUCE (REorganise Diet, Unnecessary sCreen time and Exercise) programme - on adiposity of Malay children. Methods: Five primary schools in an urban area in Selangor, Malaysia participated in this two-arm randomized controlled field trial. Participants were parents ($n = 134$) and their primary school-going children 8-11 years of age who were either overweight or obese. These parent-child dyads were randomly allocated to intervention and wait-list control groups and were blinded to group assignment. The intervention was a four-week training programme using two face-to-face sessions and two Facebook sessions followed by weekly booster sessions over a three-month period using WhatsApp. The primary outcome was body mass index (BMI) z-score. Height, body weight, waist circumference and percentage of body fat were measured by blinded assessors. Data were collected at baseline (T1), immediately post-training (T2) and at three- (T3) and six-month post training (T4) and were analysed using generalized linear mixed modelling adjusted for covariates to estimate the intervention effects. Subgroup analysis was conducted for overweight and obese children. Results: Ninety-one percent of parents completed the study, 64 in intervention group and 58 in wait-list group. At the sixth month post-training, BMI z-scores were significantly reduced in the intervention group compared to the wait-list group, for the all children (overweight and obese children) and within the obese subgroup ($(F(6, 517) = 2.817, p = 0.010)$ and $(F(6, 297) = 6.072, p < 0.001)$ respectively). For waist circumference percentile and body fat percentage, the intervention group experienced a significant reduction compared to the wait-list group, within the obese subgroup ($(F(6, 297) = 3.998, p = 0.001)$ and within the overweight subgroup ($F(6, 201) = 2.526, p = 0.022$). Conclusions: The four-month REDUCE intervention programme was effective in reducing childhood adiposity. Further research using this approach needs to be conducted including cost-effectiveness studies before implementing it in a child obesity prevention programme.

Keywords: Body fat percentage; Body mass index; Paediatric obesity; Parents intervention; Primary school children; Social media; Waist circumference

