

eTitle

GDM-Health Plus: Development of a remote behavioural lifestyle management system for women with gestational diabetes

Authors: Pamela Dyson, Jane Hirst, Katy Bartlett, Yvonne Kenworthy, Angela Hargreaves, Sophie Roberts, Leticia Bradbury, Carmelo Velardo, Susan Jebb, Lionel Tarassenko, Lucy Mackillop

Aim

Preventing hyperglycaemia and excessive gestational weight gain through diet and physical activity are central to the management of women with gestational diabetes mellitus (GDM), although lifestyle change can be challenging. A remote digital blood glucose management system for women with GDM (GDM-health) has been evaluated previously, and the aim of this project was to test the feasibility of using this platform to support behavioural lifestyle change.

Methods Women already using GDM-health, were offered voluntary participation in a service development project using a lifestyle app (GDM-health Plus). Women were asked to perform glucose monitoring, weekly self-weighing, carbohydrate counting and physical activity monitoring. Real time feedback was given by specialist dietitians and midwives. Quantitative evaluation assessed system usage, and qualitative analysis used a validated questionnaire (OMDTSQ)

Results

18 women took part. Mean (SD) age 33.4(5.0) years, weight 92.4(27.1) kg. GDM-health Plus was introduced at mean 31.4(4.8) weeks gestation, with mean usage of 7.3 weeks. 11/18(61%) tested blood glucose at least 12 times weekly, 15/18(83%) recorded at least one weight but only 7/18(39%) recorded weight more than once, 14/18(78%) began carbohydrate counting and 16/18(89%) recorded physical activity. 13/18(72%) completed the satisfaction questionnaire and scores ranged from 3.7/4 (testing blood glucose) to 2.2/4 (feedback about weight).

Conclusion

In this small cohort of women with GDM, interaction with an enhanced app to monitor key behaviours was high, with the exception of self-weighing. Further evaluation of the efficacy of enhanced diet and physical activity support using digital health to address weight management is warranted.