

Dietary digital tools to support self-management of gestational diabetes mellitus: a systematic literature review

N. Adesina¹, H. Dogan², S. Green¹ and F. Tsofliou¹

¹Faculty of Health and Social Sciences, Bournemouth University, Dorset, UK and

²Faculty of Science and Technology, Bournemouth University, Dorset, UK

Dietary Advice is an essential first line intervention for the management of Gestational Diabetes Mellitus⁽¹⁾. Digital tools, such as web based and mobile phone apps, have been used successfully in health interventions for the management of lifestyle related conditions, and may be a useful dietary approach to supporting optimal glucose regulation in women with gestational diabetes mellitus⁽²⁾. This systematic literature review aimed to investigate effectiveness, acceptability, and feasibility of dietary digital tools to support self-management of Gestational Diabetes Mellitus.

Methods: Five bibliographic databases (MEDLINE, the Cochrane Central Register of Controlled Trials in the Cochrane Library, Embase, CINAHL, and PsycINFO) were searched between September 2020 and January 2021. Studies were included if they reported: Investigation on pregnant women with history or diagnosis of GDM, digital tools focusing dietary and /or lifestyle management of gestational diabetes mellitus, outcomes relating to digital tools for management of gestational diabetes. The quality of the included studies was assessed using the ErasmusAGE Quality Score or the Mixed Methods Appraisal Tool (MMAT). We did not perform meta-analysis due to the presence of substantial heterogeneity of data across the included studies. However, the findings were interpreted using thematic analysis.

16 studies were included in the review (with total participants n = 2593). The studies were conducted in three continents (Europe, Asia, and Australia). 10 studies (n = 1906) reported on the effectiveness of digital tools to adopt healthy diet, monitoring of blood glucose and other lifestyle practices, but could not establish the effectiveness of the tools due to inconsistencies in dietary guidelines and lack of ethnic-specific dietary advice observed in the digital tools. The tools were found to be acceptable by participants in three studies (n = 338) that evaluated the acceptability of dietary digital tools in terms of user satisfaction, perception, and recommendation to other women with GDM. Three studies (n = 349) which evaluated feasibility in terms of actual use, intention to use and perceived appropriateness of the digital tools also found them feasible. Common issue observed across all included studies is limited representativeness of the data, this is characterised by a small number of participants and lack of ethnic diversity

This is the first systematic review on digital tools focusing on dietary management of Gestational Diabetes Mellitus. Based on findings of this review, digital tools to support lifestyle improvement relating to healthy diet, health behaviour and adherence to diet therapy in women with GDM were found to be an acceptable and feasible intervention. However, there was a lack of evidence concerning the effectiveness of the dietary digital tools to support self-management of GDM. The results suggest further consideration of ethnic specific dietary advice and evidence-based framework in the development of effective digital tools for dietary management of GDM.

References

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