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A primary care-led weight management intervention for adults with diabetes and obesity: quantitative results from a randomised controlled trial of total meal replacement (DiRECT)

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Methods to reduce obesity and type 2 diabetes in Aotearoa New Zealand are desperately needed, with obesity one of the greatest predisposing factors for type 2 diabetes as well as heart disease, and certain cancers.[1] A recent New Zealand report[2] identified several interventions that might benefit people with established diabetes, the most promising being a period of rapid weight loss, followed by supported weight-loss maintenance. Such weight loss has shown to achieve what was previously thought impossible, diabetes remission,[3] as well as appreciably reduce the risk of cardiovascular disease and prevent diabetes-related chronic kidney disease, retinopathy, nephropathy, and lower limb amputation.[2] While the findings from the studies of low energy total meal replacement diets have stimulated great interest, their use in Aotearoa New Zealand has not been considered. The purpose of this primary-care led intervention therefore was to consider the acceptability and efficacy of such a weight loss programme, DiRECT, in Aotearoa New Zealand. Te Kāika DiRECT is a 12-month study conducted within a Māori primary healthcare provider in Ōtepoti Dunedin. The DiRECT protocol is three months of total meal replacement for rapid weight loss followed by food reintroduction and a longer period of supported weight loss maintenance. Participants were adults with prediabetes or T2 diabetes and obesity wanting to lose weight. Twenty participants (70% female, age 46 (SD 10), BMI 41 (9), HbA1c 51 (11)) were randomised to receive the DiRECT protocol, twenty more (70% female, age 50 (SD 8), BMI 40 (7), HbA1c 54 (14)) were randomised to receive best practice weight loss support (usual care). All participants had the same number of visits with the in-house Dietitian and free access to the onsite gym. Participants in the control group also received regular grocery vouchers to purchase the foods encouraged by healthy eating guidelines. Recruitment began in February, 2022. After the initial three month study period, DiRECT participants reported consuming 3.0MJ (95% CI 1.2 to 4.8MJ) less energy per day than those in usual care. Mean weight loss was 6kg (2.3-9.6kg) greater for DiRECT participants than usual care participants, while medication use and systolic blood pressure (12mmHg (0-24mmHg)) were lower. Continuous glucose monitoring identified that at baseline, participants on average only spent 10% of the day with a blood glucose reading under 8mmol/L (normoglycaemia). After three months, the usual care group spent on average 48% of the day within the normoglycaemic range, while DiRECT participants spent 78% of the day within the normoglycaemic range. Results at 12 months will enable comment on longer term markers of blood glucose control (HbA1c) and diabetes remission rates, as well as indicate if the body weight, medication, and blood pressure improvements observed at three months are sustained.

Keywords: diabetes; body weight; RCT; primary care

Ethics Declaration

Yes

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