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A digitally delivered low-carbohydrate type 2 diabetes self-management program



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Background: Type 2 diabetes has serious health consequences including blindness, amputation, stroke, and dementia, and its annual global costs are more than \$800 billion. Although typically considered a progressive, nonreversible disease, some researchers and clinicians now argue that type 2 diabetes may be effectively treated with a carbohydrate-reduced diet.

Objectives: Our objective was to evaluate the 1-year outcomes of a digitally delivered Low Carb Program (LCP), a nutritionally focused, 10-session educational intervention for glycemic control and weight loss for adults with type 2 diabetes. The program reinforces carbohydrate restriction using behavioral techniques including goal setting, peer support, and behavioral self-monitoring.

Methods: The study used a quasi-experimental research design comprised of an open-label, single arm pre- and post-intervention using a sample of convenience. From adults with type 2 diabetes who had joined the program and had a complete baseline dataset, we randomly selected participants to be followed for 1 year (N=1000; mean age 56.1, SD 15.7, years; 59% (593/1000) women; mean HbA1c 7.8, SD 2.1, %; mean body weight 89.6, SD 23.1, kg; taking an average of 1.2 diabetes medications).

Results: Of the 1,000 study participants, 708 (70.8%) individuals reported outcomes at 12 months, 672 (67.2%) completed at least 40% of the lessons, and 528 (52.8%) completed all lessons of the program. Of the 743 participants with a starting HbA1c at or above the type 2 diabetes threshold of 6.5%, 195 (26.2%) reduced their HbA1c to below the threshold while taking no glucose-lowering medications or just metformin. Of the participants who were taking at least one hypoglycemic medication at baseline, 40.4% (289/714) reduced one or more of these medications. Almost half 46.4%, (464/1000) of all participants lost at least 5% of their body weight. Overall, glycemic control and weight loss improved, especially for participants who completed all 10 modules of the program. For example, participants with elevated baseline HbA1c ($\geq 7.5\%$) who engaged with all 10 weekly modules reduced their HbA1c from 9.2% to 7.1% ($P < 0.001$) and lost an average of 6.9% of their body weight ($P < 0.001$).

Conclusions: Especially for participants who fully engage, an online program that teaches a carbohydrate reduced diet to adults with type 2 diabetes can be effective for glycemic control, weight loss, and reducing hypoglycemic medications.

Biography

Charlotte Summers holds a BSc Hons degree in Psychology and has been part of the Diabetes.co.uk team since 2012. She manages daily operations of Europe's largest diabetes resource and diabetes patient-to-patient forum as well as implementing persuasive methods to improve optimization. This year, she has spoken at Breckenridge 2017 about "180,000 anecdotes: The Low Carb Program" and in November 2017, she will present "Play Your Carbs Right" at the Diabetes Professional Care conference in London. She is a regular spokesperson in the UK media and is often called upon to comment in newspapers including The Daily Mail, Guardian, and The Times about healthcare and reversing type 2 diabetes and obesity in the UK and worldwide with digital health, in particular Diabetes.co.uk's Low Carb Program which has data to demonstrate a saving of £6.9 million to the NHS in little under 18 months.

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