

Text message-based diabetes self-management support: SMS4BG

Background

Diabetes self-management with the support of healthcare providers is critical for successful outcomes, however frequent clinical contact is costly. Text messages (SMS) have the advantage of instant transmission at low cost and, given the ubiquity of mobile phones, may be the ideal platform for the delivery of diabetes self-management support to patients in their day-to-day lives.

What we did

We developed a theoretically based and individually tailored text message self-management support programme (SMS4BG) for adults with poorly controlled diabetes.¹

Personally tailored

- Name
- Culture
- Personal motivations
- Support people
- Delivery time
- Module choices
- Length of programme

Designed to support patients in their everyday lives to increase motivation for good blood glucose control



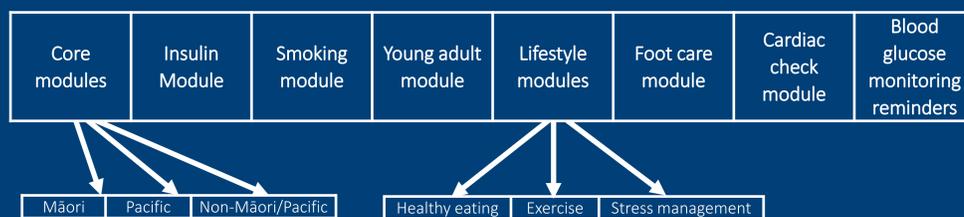
Text message based

- Instant delivery
- Free for patients

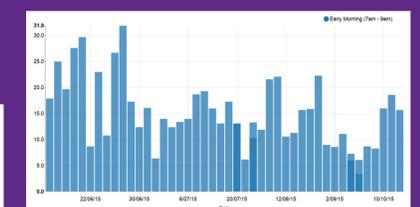
Addressing access issues

- Low health literacy
- Disengagement
- Rural/ remote
- Limited technology access

Modules



Feedback via a personal website



SMS4BG: Hi [name]. Your diabetes can be controlled, reducing the impact on your health & your life! Do it for your [motivation1] & [motivation2]

SMS4BG: Kia ora. Control of your glucose levels involves eating the right kai, exercising & taking your medication. Your whanau, doctor & nurse can help you

SMS4BG: Don't let your diabetes get in the way of your social life or study/work. Taking the time to manage your diabetes now means more time for fun & friends

SMS4BG: Hi [name]. Good management of your diabetes & your future health includes not smoking. Call Quitline on 0800 778 778 for support

SMS4BG: Self-care is key to feeling good & managing stress. Good self-care involves eating well, regular exercise, good sleep & relaxation time

SMS4BG: Good foot care as well as managing your blood glucose, eating healthy & keeping active will help to prevent problems with your feet in the future

SMS4BG: If you feel sweaty, dizzy, extremely hungry, confused or irritable you could be having a hypo. Test your blood glucose & quickly eat something sugary

SMS4BG: If you keep on top of your diabetes today there will be less short & long term impacts on your health. Over time good management will become a habit

Characteristic	Intervention group (N=183)	Control group (N=183)
Gender: Male	92 (50%)	97 (53%)
Ethnicity category		
Māori/Pacific	66 (36%)	66 (36%)
non-Māori/non-Pacific	117 (64%)	117 (64%)
Diabetes type		
Type 1	65 (36%)	64 (36%)
Type 2	118 (64%)	119 (65%)
Location		
High urban	125 (68%)	117 (64%)
High rural/remote	58 (32%)	66 (36%)
Age (years), mean (SD)	47 (15)	47 (15)
Time since diagnosis (years), mean (SD)	13 (11)	12 (9)
Baseline HbA1c (mmol/mol), mean (SD)	86.4 (17.8)	83.3 (14.8)

Methods

A randomized controlled trial of 366 adults with poorly controlled diabetes (HbA1c ≥ 65 mmol/mol) recruited from across New Zealand was conducted to assess the effectiveness of SMS4BG compared to usual care.^{2,3}

Key Results

- SMS4BG was found to be clinically effective, acceptable, and cost-effective.
- At 9 months HbA1c was significantly lower in the intervention group (SMS4BG) compared with the control group (usual care) ($p=0.01$)
 - A decrease in HbA1c from baseline to 9 month follow up was seen in 75% of intervention participants.
 - 95% said SMS4BG was useful and 97% would recommend it to others

¹Dobson R, Carter K, Cutfield R, Hulme A, Hulme R, McNamara C, Maddison R, Murphy R, Shepherd M, Strydom J, Whittaker R. Diabetes Text-Message Self-Management Support Program (SMS4BG): A Pilot Study. JMIR mHealth uHealth 2015;3(1):e32

²Dobson R, Whittaker R, Jiang Y, Shepherd M, Maddison R, Carter K, Cutfield R, McNamara C, Khanolkar M, Murphy R. Text message-based diabetes self-management support (SMS4BG): Study protocol for a randomized controlled trial. Trials 2016 17:179.

³Dobson R, Whittaker R, Jiang Y, Maddison R, Shepherd M, McNamara C, Cutfield R, Khanolkar M, Murphy R. Effectiveness of text message-based diabetes self-management support programme (SMS4BG): A randomised controlled trial. 2018 Submitted

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