

VISUAL FOOD DIARY FOR SOCIAL SUPPORT, DIETARY CHANGES AND WEIGHT LOSS

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BACKGROUND

Behaviour changes in diet may prevent or delay onset of chronic diseases such as type 2 diabetes. Social support is a known predictor of successful behaviour change. However, it is not known whether also virtual peer support could be used to improve dietary behaviour.

OBJECTIVE

To find out whether virtual peer support groups moderated by a nutrition professional using a mobile application can be used to promote healthy eating.

METHODS

In this 4-week feasibility study, volunteering adult (n=26) overweight (BMI > 25 kg/m²) men and women were recruited from a diabetes outpatient clinic and from an occupational health care unit.

Participants used a smartphone application to keep a visual food journal, share their meals and activity with peer group members and receive virtual coaching.

Several physical measurements and questionnaires were completed both before and after the intervention:

- food frequency questionnaire (FFQ) including eight food groups in 48 rows
- self-efficacy, group environment and social support scales
- height, weight and waist circumference Also frequency of the application use was analysed.

RESULTS

After the intervention the daily use of vegetables and fruits were 6.04 (SD 2.31) portions. The daily use had increased by 2.15 (SD 2.64) portions (p<0.001) compared to baseline.

Food	Change in consumption (average, SD)	Significance
Vegetables and fruits, per day	2.15 (2.64)	p < 0.001
Wholegrain products, per day	0.30 (1.33)	p = 0.274
Low-fiber grain products, per week	-0.70 (3.17)	p = 0.276
Sweets and chocolate, per week	-0.97 (4.14)	p = 0.248
Sugared soft drinks and juices, per week	-0.39 (2.38)	p = 0.419
Sugar-free soft drinks and juices, per week	-0.85 (3.09)	p = 0.175

Paired samples t-test was used for vegetables, fruits and wholegrain products. For the other variables Wilcoxon Signed Rank test was used.

Mean weight loss after the intervention was 1.5 kg (SD 1.82, p=0.001) in all subjects together. Mean reduction in waist circumference was 2.4 cm (SD 2.418, p=0.001).

Variable	Change after intervention (average, SD)	Significance
Weight (kg)	-1.54 (1.82)	p = 0.001
BMI (kg/m²)	-0.54 (0.63)	p = 0.001
Waist circumference (cm)	-2.40 (2.42)	p = 0.001

Wilcoxon Signed Rank Test was used.

84% of participants agreed that they got support from other group members. The use of application was high: average user uploaded 5.2 meals per day and used the application total of 9.3 times per day.

CONCLUSIONS

Smartphone based virtual coaching and peer support can be used as a tool to promote healthy eating and weight loss.



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