Telephone nutrition intervention delivery leads to higher frequency of goal achievement and behaviour change compared to mobile app interventions

Comparison of Goal Achievement During an Early, Intensive Nutrition Intervention Delivered to People with Upper Gastrointestinal Cancer by Telephone Compared with Mobile Application

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INTRO

- There has been a substantial increase of provision of healthcare via e-Health technology due to the COVID-19 health pandemic
- No reported investigations on whether synchronous or asynchronous dietetic behaviour change intervention delivery impacts goal achievement
- ***Aim:*** **Whether telephone or mobile app nutrition intervention delivery affects participant goal achievement for upper gastrointestinal cancer (UGI) patients**

METHODS

- ***Design:*** Three-armed randomised controlled trial
- ***Participants:*** Newly diagnosed (<4 weeks) UGI (oesophageal, gastric, and pancreatic) cancer patients planned to commence surgical and/or medical (chemotherapy and/or radiotherapy) cancer treatment
- ***Setting:*** Recruited from four tertiary hospitals (public and private) across southeast Melbourne, Victoria, Australia
- ***Intervention:*** Regular nutrition intervention for 18 weeks from an experienced dietitian via telephone (synchronous) or mobile application (asynchronous) using behaviour change techniques compared to usual care control group
- ***Analysis:*** Univariate and multiple regression models using STATA determined goal achievement, dose and frequency of contact between groups. A *p-value* <0.05 was considered statistically significant

RESULTS

- A total of **n=111** participants were recruited from April 2017 to July 2019

Telephone group:

- (*n=38*), over 400 interventions delivered
- Resulted in 1.99 times increased frequency of contact with the research dietitian (95% CI: 1.67 to 2.36, p<0.001) and 2.37 times greater proportion of goals achieved (95% CI: 1.1 to 5.11, p=0.03)
- Dose of intervention was positively associated with participant goal achievement (0.03, 95% CI 0.14 to 0.08, p=<0.001)

Mobile app group:

- (*n= 36*), 188 interventions delivered
- Less likely to be exposed to 8 of 24 different behaviour change techniques
- Participants achieved fewer goals compared to the telephone group (-0.14, 95% CI: -0.19 to -0.07, p=<0.001)

DISCUSSION

- Telephone nutrition intervention delivery led to higher frequency of goal achievement compared to the mobile app intervention
- The telephone intervention employed a higher number of behaviour change techniques which may have facilitated the greater goal achievement
- There needs to be specifically designed technologies for target populations as mobile app-based delivery may have poorer acceptance in this population

AMMO BAR

Eligibility:

- Patients who had commenced chemotherapy or radiology were ineligible to participate in the trial

Behaviour Change Technique Taxonomy:

- Formed the basis for the behaviour change techniques used to support SMART goal setting.

Behaviour Change Technique	Example
1. Goals and Planning	
1.1 Goal setting (behaviour)	Set the goal of eating 5 pieces of fruit per day
1.4 Action Planning	Prompt planning the drinking of a supplement at a particular time (e.g., before work) on certain days of the week
1.5 Review goal (behaviour)	Ask if the patient drank the supplement as planned
1.6 Highlight discrepancy between current and goal (behaviour or outcome)	Point out that the recorded supplement intake fell short of the goal set
4. Shaping Knowledge	
4.1 Instruction on how to perform behaviour	Demonstrate or describe to the person how to prepare thickened fluids

Synchronous Telephone Intervention

- Participants received regularly weekly or fortnightly phone contact from the research dietitian to their own home or mobile telephone

Asynchronous mobile Intervention

- Participants were provided with a tablet computer and 6-months wireless connectivity
- A pre-existing mobile app (myPace) was employed
- Included a messaging function for communication with the dietitian asynchronously, daily reminders for self-monitoring of weight and completion of scheduled goals

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