

# Goal setting to foster health behaviour changes in multidomain dementia risk reduction interventions: findings from the Luci pilot feasibility study

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## INTRODUCTION

The Luci program is a digital, behavioural, coach-supported, dementia risk reduction intervention. It targets cognitively healthy, middle-aged to older adults with lifestyle risk factors. The intervention aims to help participants improve their adherence to a healthy diet, and level of physical activity and cognitive engagement. Goal setting is one of the core components of the Luci program.

Goal setting has been shown to be an effective behaviour change technique. This strategy is used to assist individuals in identifying desired outcomes and in developing a plan to achieve them. Goal setting features are key to, and likely to impact the intervention's success.

## OBJECTIVES

- To examine if and how goal features (goal attainment level, perceived difficulty, number of domains tackled, and number of goals per domain) influenced the Luci intervention success across lifestyle domains;
- Intervention success was also examined in relation to the presence of the domain-related risk.

## METHODS

**Population:** 119 cognitively healthy individuals aged 50-70 with  $\geq 1$  risk factor in the targeted intervention domain.

**Design:** A 24-week, 2:1 randomized Luci vs wait-list controlled pilot feasibility study.

### Intervention:

- Weekly (week 1-12), then bi-monthly (week 13-24) sessions with a coach;
- The coach assisted participants in creating SMART, personalized goals in the behavioural domain(s) they wished to work on, regardless of their risk status;
- Participants monitored their goals before each coaching session.

### Measures:

#### Goal-related measures:

- Attainment level:** 3-point ordinal scale coded binarily (not at all or partially achieved = 0; fully achieved = 1).
- Perceived difficulty:** 3-point ordinal scale coded binarily (easy = 0; medium or hard = 1).
- The latest goal monitoring data is used for analysis.

**Number of domains:** A domain is accounted for if participants have set  $\geq 1$  goal in the considered domain.

**Intervention success:** A clinically significant change (CSC) from baseline to week 24 was defined as:

- Healthy diet:  $\geq 1$ -point on the Canadian Mediterranean Diet Score;
- Physical activity:  $\geq 300$  METs-min/week on the Godin-Shephard questionnaire;
- Cognitive engagement:  $\geq 6$ -point on the Cognitive Activity Questionnaire.

## RESULTS & DISCUSSION

### PARTICIPANTS CHARACTERISTICS

- 79 participants received the Luci intervention.
- Mean age was 70 years old.
- Participants were predominantly women (86.1%) and university educated (68.4%).

### GOAL SETTING

Of the 79 Luci group participants, 73 set goals in one or more domain.

#### Number of participants and goals by lifestyle domain

Lifestyle domain	Number of participants	Number of goals	Mean number of goals per participant
Healthy diet	52	186	3.9
Physical activity	47	82	2.5
Cognitive engagement	32	101	2.8

### GOAL FEATURES AND INTERVENTION SUCCESS

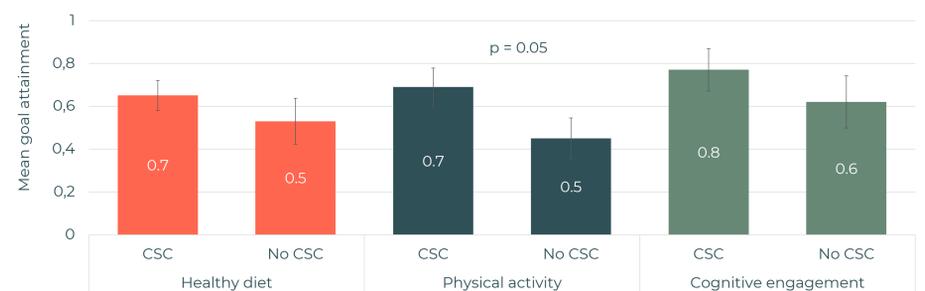
Among the 73 participants who set at least one goal, the % reaching a CSC was 84.6% for HD, 48.9% for PA, and 50.0% for CE.

#### CSC attainment tends to be superior for those setting a higher number of goals

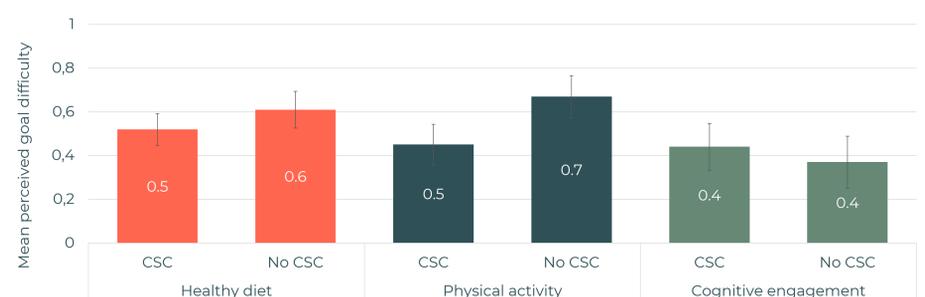


### GOAL FEATURES AND INTERVENTION SUCCESS (CONTINUED)

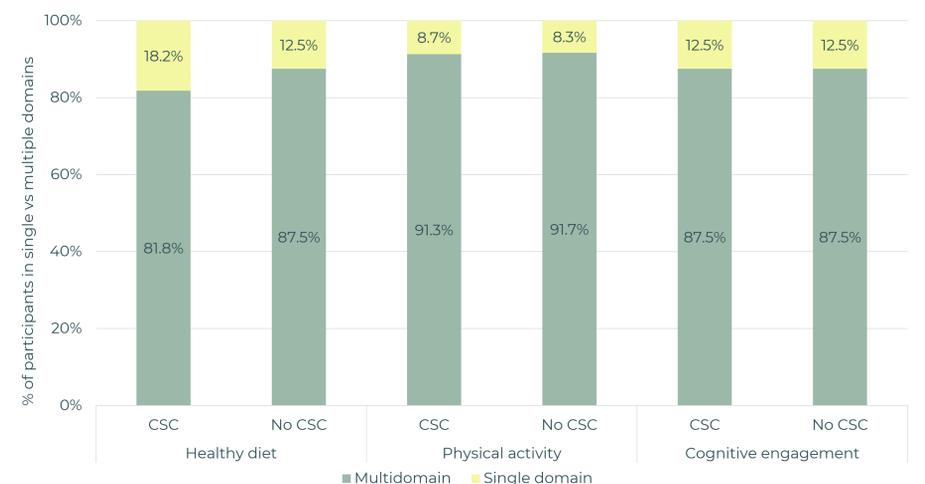
#### Goal attainment was higher for participants achieving a CSC



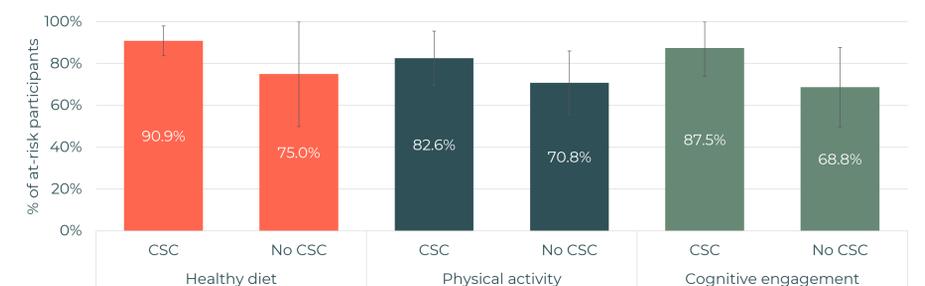
#### Perceived difficulty tended to be lower in participants achieving a CSC



#### Engaging in multiple domains did not impact CSC achievement



#### The % of domain-related at-risk participants was higher in those who reached a CSC



## CONCLUSION

➤ Results suggest that CSC was better achieved when participants:

- Set a higher number of goals;
- Reported higher goal attainment and lower goal difficulty;
- Were at-risk in the tackled domain.

➤ Number of domains tackled (single vs. multiple) did not appear to impact CSC attainment.

Our results bring insights into how goal features might modulate behaviour change. These findings will be used to optimize the Luci intervention. They can guide coaches on how to best help participants set goals for effective behaviour change.