

230P - A Digital Therapeutic Intervention for Breast Cancer Patients During Active Treatment: A Feasibility Study

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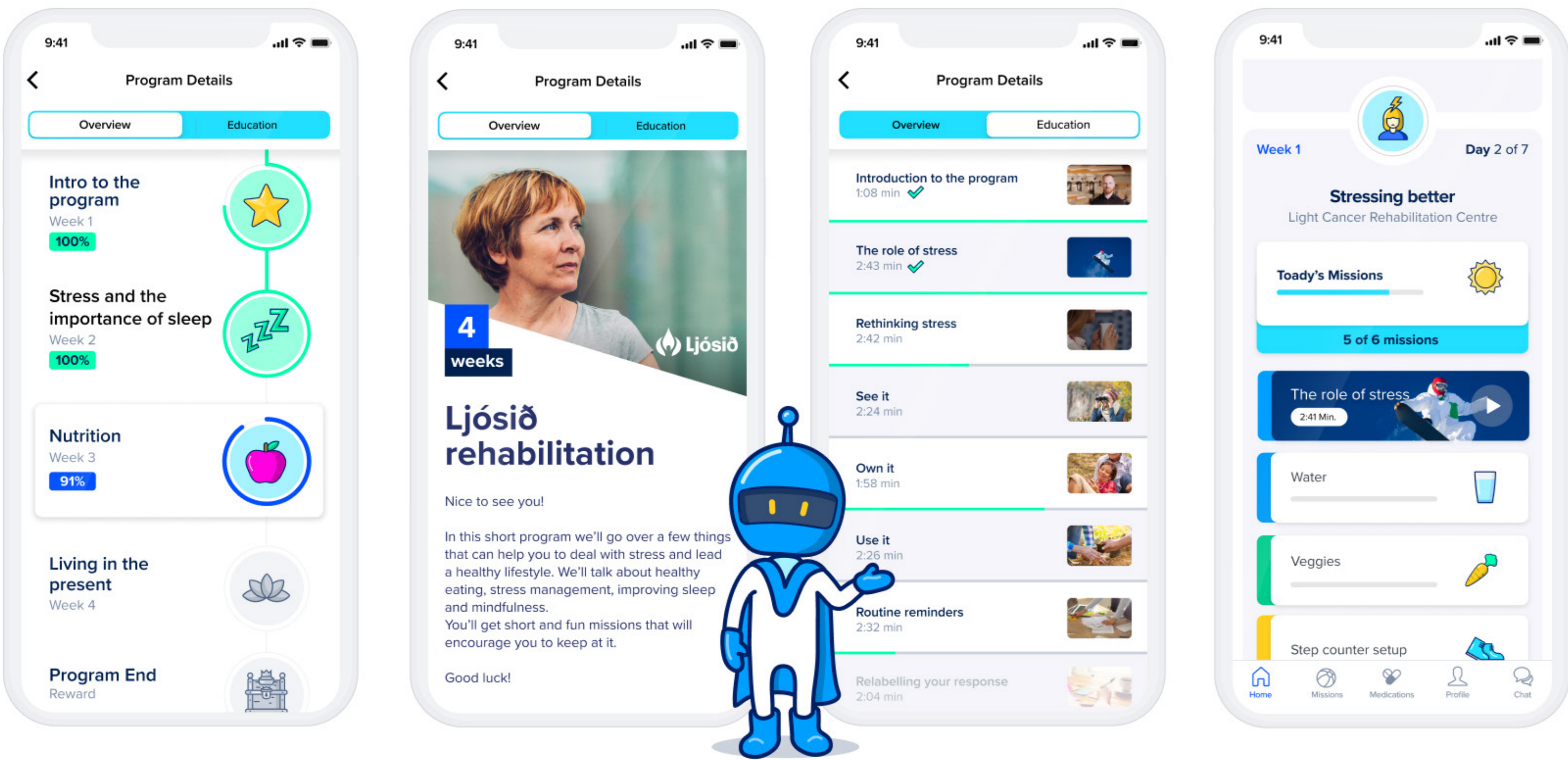
Introduction

While there is an emphasis on developing new cancer treatment, caring for patients already receiving therapy hasn’t gained as much attention despite the fact that available therapies are physically and emotionally demanding. Research has shown that **behavioral modifications** (e.g. regular aerobic and resistance training, mindfulness exercises, improved diet) **can improve the health-related quality of life** of cancer patients. However, these modifications are hard to achieve especially during cancer treatment.

Digital interventions can effectively improve pain, fatigue and overall health-related quality of life. We have developed a digital therapeutic program to help with the structured implementation of lifestyle improvements to achieve lasting improvements for patients.

Digital Intervention - The Sidekick app

The **Sidekick app** combines gamification with behavioral psychology to motivate people for a healthier lifestyle through in-app missions. It includes interaction with **lifestyle coaches** and **altruistic rewards** for completing missions.



The 5 mission categories:

- 1 Nutrition** food logging
- 2 Physical activity** exercise and move tracking
- 3 Mindfulness** meditation and self-reflection
- 4 Health education** videos
- 5 General health** medication reminders and PROs

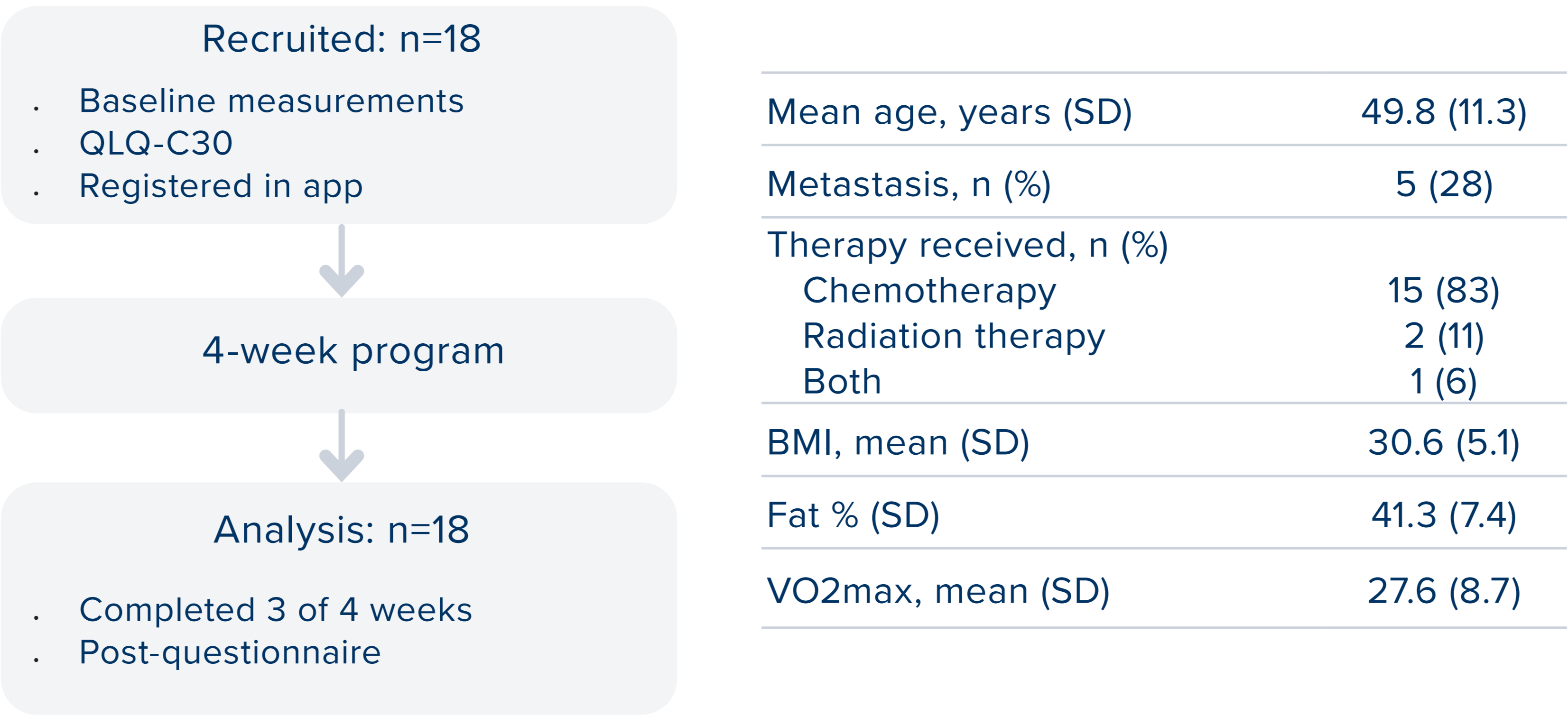
Content focus each week in the Oncology program:

- 1 Stress**
- 2 Sleep**
- 3 Nutrition**
- 4 Mindfulness**

Design and Measurements

Study design: four-week-long, single-arm feasibility trial in Iceland.
Recruitment: The study was advertised at The Light (Ljósið), a cancer rehabilitation clinic.
Measurements done at baseline and follow-up:
Cardiovascular fitness (Åstrand)
Body composition (InBody 770)
Cancer-specific quality of life (EORTC QLQ-C30)
Usage information (engagement, retention, step goal attainment) was collected through the app.

Participants



Engagement and retention

Weekly active days, median (IQR)	6.1 (5.2, 6.9)
Total active days, median (IQR)	24.5 (19.3, 27.8)
Daily mission interactions, mean (SD)	7.6 (2.1)

Step goal attainment

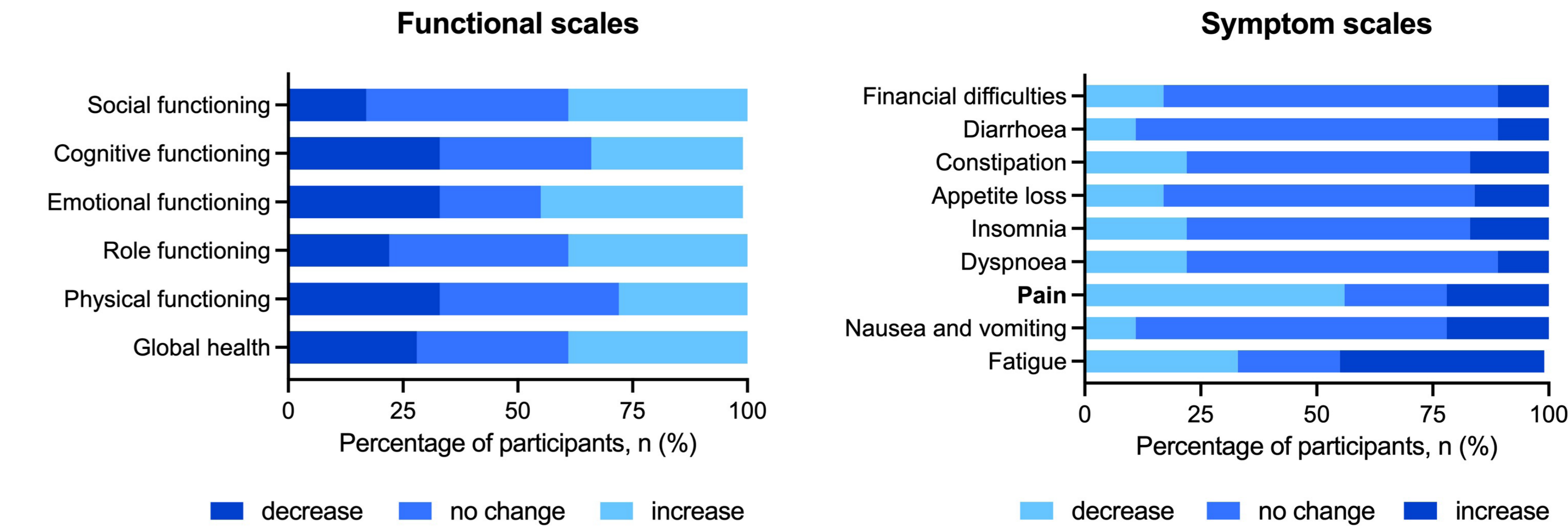
Week	Used step counter, n (%)	Attained step goal, n (%)	Weekly step counts, mean
1	18 (100%)	14 (78%)	23229
4	16 (94%)	12 (71%)	26788

Step goal was set at 3000 steps/day or 15000 steps/week.



Cancer-related Quality of Life - QLQ-C30

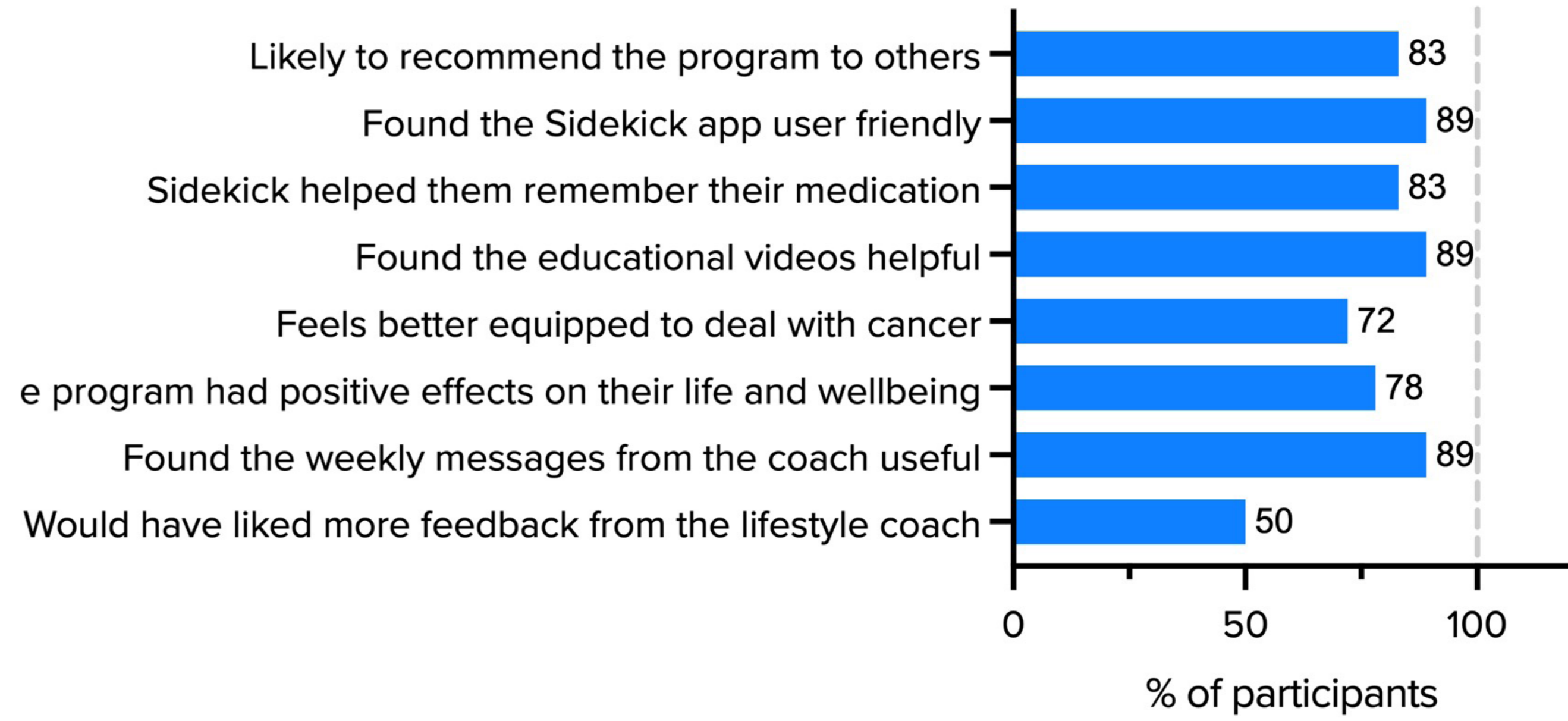
Percentage of participants reporting decrease, increase or no change in functional or symptom scales from pre- to post-program:



Average global health status, functional and symptom scales remained stable over time. The largest improvement was seen in the following items, but none was significant:

QLQ-C30 item	Baseline	Post-program
Global Health status	60.2	61.1
Role functioning	56.5	62
Social functioning	58.3	64.8
Pain	32.4	21.3
Financial difficulties	20.4	13

Program acceptability



Conclusions

The high retention, engagement and acceptability suggest that a digital therapeutic intervention is feasible for breast cancer patients. A longer, full-scale RCT is currently being planned to evaluate the efficacy of the intervention.