The Cancer Healthy Aging Program
Implementing an e-Health Program to Increase Daily Exercise and Reduce the Fatigue Associated with Cancer Therapy

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INTRODUCTION

➢Cancer related fatigue is one of the most common, debilitating and chronic complications associated with breast cancer, especially among patients treated with radiation therapy and chemotherapy. Moreover, at least one third of breast cancer patients also experience symptoms of depression, anxiety, and sleep disturbances.

➢Regular physical activity is recommended as one of the primary treatments for fatigue and these other symptoms.

OBJECTIVES

➢The purpose of this study is to develop and evaluate the feasibility of a web-based e-health program to reduce fatigue and improve treatment induced symptoms.

METHODS / INTERVENTIONS

Phase 1 consisted of developing the program based on a needs assessment. After surveying 27 breast cancer patients from the MUHC and CHUM, we were able to develop a web-based program that addressed the needs of this population.

The web-program consisted of a variety of tools including:

1) Assessments to determine baseline and follow-up cancer–related fatigue (Functional Assessment of Chronic Illness Therapy – Fatigue), stress (Perceived Stress Score), sleep problems (Insomnia Severity Index), Depression (Centre for Epidemiologic Studies – Depression)., and Fitness (Metabolic equivalents using weekly minutes of moderate and vigorous exercise).
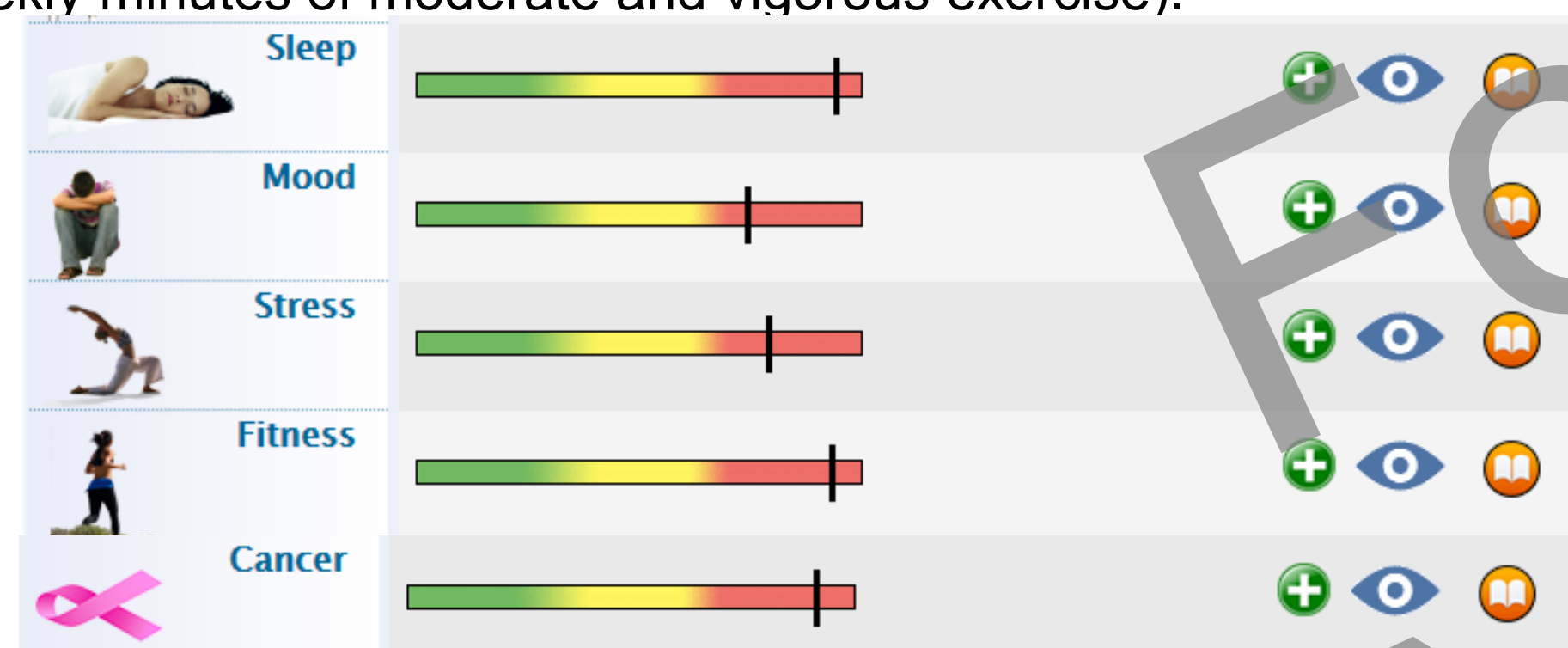

2) Educational modules to address a variety of topics including: Exercise for the cancer patient, Managing stress, Managing sleep issues, and Improving mood.
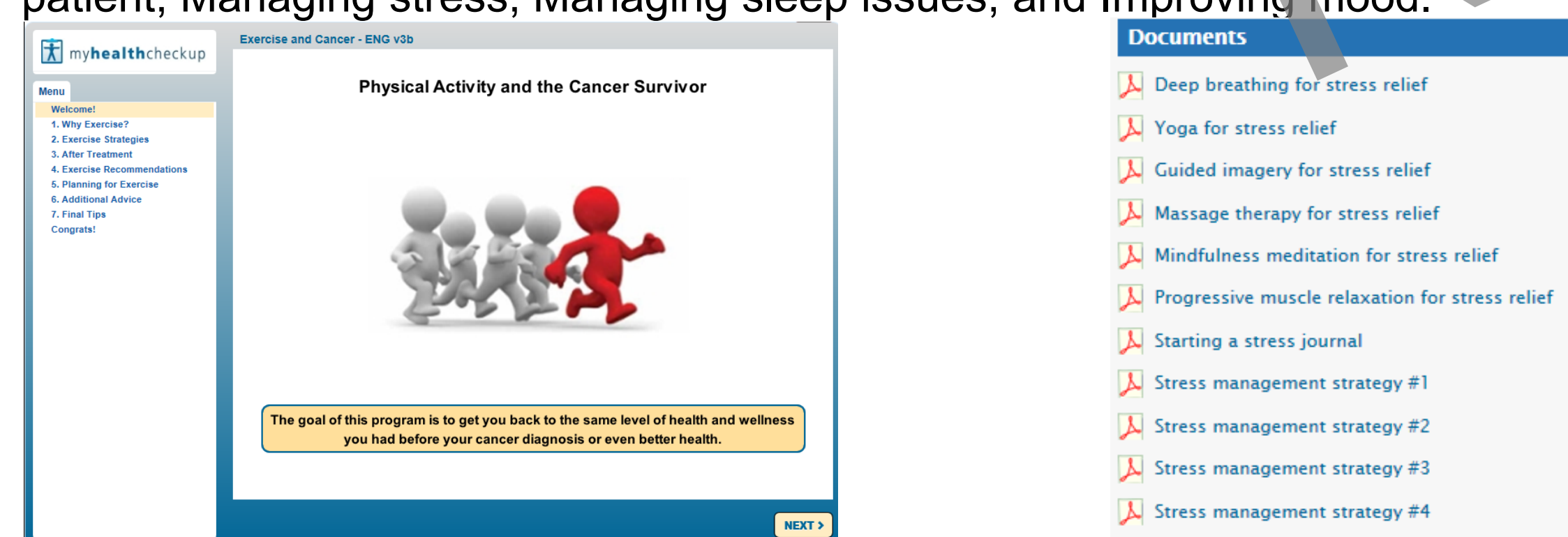
3) An 8-week exercise challenge. With the advice of an exercise professional, patients chose a challenge that best suited their current exercise level (5,000 to 13,000 steps/day). A pedometer was provided and patients were asked to track their activity daily. To maintain motivation over the 8 weeks, interesting landmarks with fun facts were placed along the route. They also raced an Avatar (based on their baseline step goal) to the finish line.

4) Daily tips dealing with a variety of topics that were rated as important during the needs assessment.
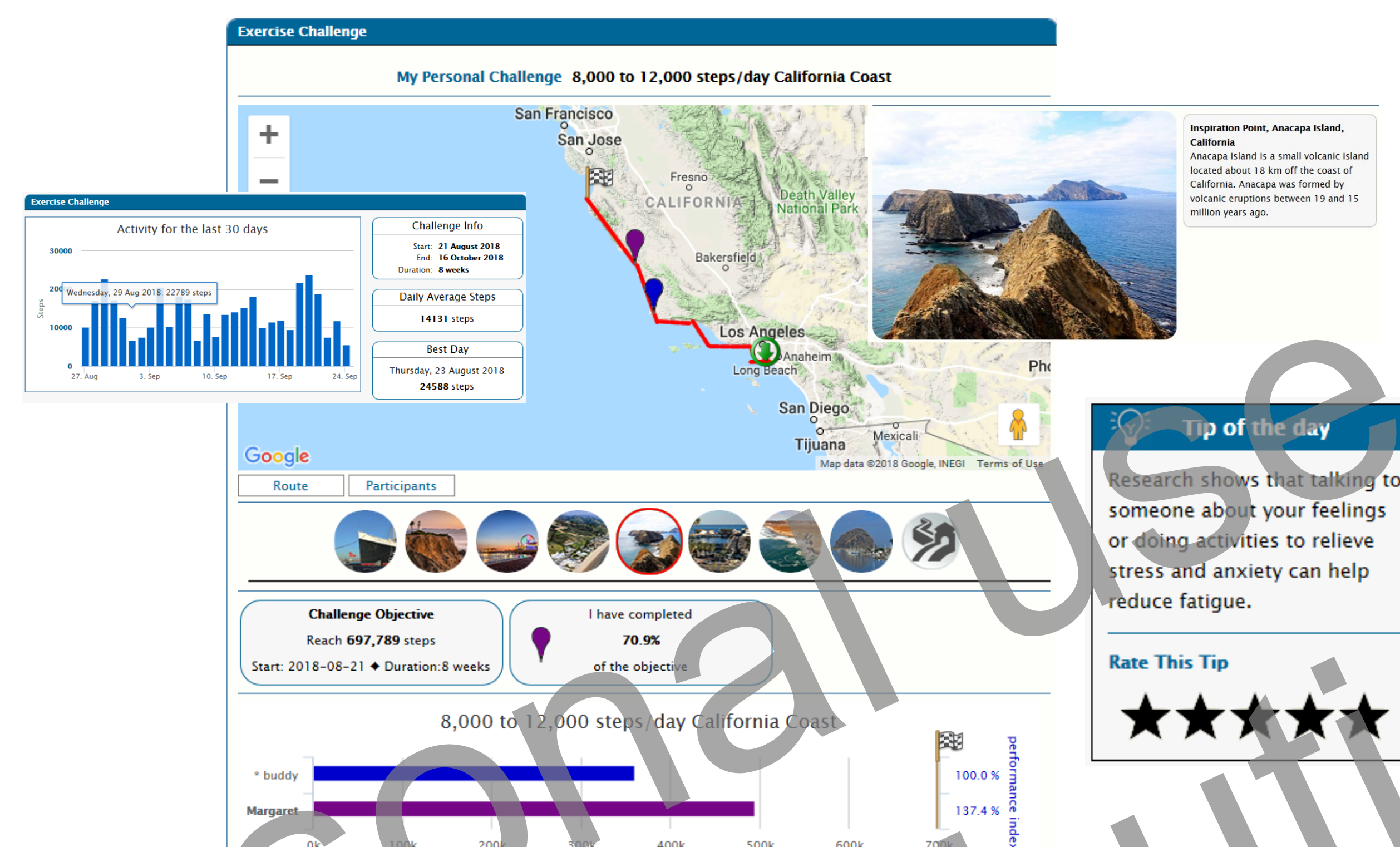
Recruitment began January 2018 for phase 2 of the study. Recruitment materials were developed and presentations were made to health professionals at the MUHC, CHUM, and St. Mary's. Interested patients contacted the McGill Comprehensive Health Improvement Program (CHIP) where they were seen by a physician to make sure it was safe for them to exercise. A kinesiologist showed them the website, helped them choose the appropriate exercise challenge, and did the baseline assessments/measures. Patients were also offered to participate in a supervised small group exercise class once a week at CHIP.

RESULTS

By the end of August 2018, thirteen patients had enrolled in the program. At baseline 62% of patients had high fatigue, 46% had high stress, 54% had poor sleep, and 46% had high depressive symptoms. Overall, 77% of patients had one or more risk factors at baseline.

Table 1: Baseline Characteristics	
Age (years) mean score (range)	52.8 (32-70)
Cancer fatigue (FACIT-F) mean score	32.8
High fatigue (<35 of FACIT-F)	8 (62%)
Emotional stress (PSS) mean score	16.5
High stress (≥ 18 on PSS)	6 (46%)
Sleep quality (ISI) mean score	10.3
Poor sleep (≥ 8 on ISI)	7 (54%)
Depression (CED-D) mean score	15.0
High depressive symptoms (≥ 16 on CES-D)	6 (46%)

There were 3 patients who did not participate in the program for the duration of the 6-8 week exercise challenge (tracked their physical activity for less than 2 weeks) and all three were patients without any risk factors. The remaining patients tracked on average 87 days (16-161) and averaged 11,500 steps/day (3,274 to 21,030).

We presently have follow-up data on 6 patients. There were improvements in cancer fatigue (14%), stress (24%), and depressive symptoms (27%) (see Table 2). The program had the biggest impact on cancer related fatigue., where 4 of the 6 patients were considered to be suffering from cancer related fatigue at baseline, whereas at follow-up there was only 1 patient.

Table 2: Impact of the Program	Pre	Post	Absolute Change
Cancer Resilience (FACIT-F) mean score	34.7	39.5	+ 14%
Low resilience/High fatigue (<35 of FACIT-F)	67%	17%	- 50%
Emotional stress (PSS) mean score	14.8	11.2	- 24%
High stress (≥ 18 on PSS)	50%	33%	- 17%
Sleep quality (ISI) mean score	9.2	9.0	-2%
Poor sleep (≥ 8 on ISI)	67%	67%	0
Depression (CED-D) mean score	14.8	10.8	- 27%
High depressive symptoms (≥ 16 on CES-D)	50%	33%	-17%

PATIENT IMPACT

Although the patient numbers are low, the results from this pilot project are encouraging. This program is a low-cost option for helping patients manage their cancer related fatigue.

CONCLUSIONS

➢ Cancer related fatigue, high stress, poor sleep, and high depressive symptoms were common among a majority of participants.

➢ The e-health program provides encouraging preliminary results suggesting that it is successful in engaging patients to exercise and as a result improve their fatigue and other mental health risk factors.

➢ These e-health results are consistent with those observed in trials where the exercise was provided face to face in a gym. However, this approach is much more accessible, scalable and cost-effective.

➢ We will continue to enrol patients and determine if these encouraging preliminary results remain.

TRANSLATION ACROSS THE RCN

The positive initial results from this program among breast cancer patients can also be offered to patients with other forms of cancer. Although this platform was customized to meet the needs of breast cancer patients, with very little additional funding this program can be made available to all cancer patients even those in remote areas who generally lack resources. The biggest challenge is getting the health care professionals to refer patients.