Empowering Patients Across the Cancer Care Continuum: Development and Implementation of Resilience PRO Self-Management Resources

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BACKGROUND

- Patient empowerment and self-management are central to achieve proactive, participatory and sustainable oncology care.[1]
- Patient education can increase empowerment, health literacy[2], informed-decision-making[3] and decrease emotional distress at short term.[4] Behavioral interventions such as mind-body interventions, physical activity and cognitive behavioral therapies are validated evidence-based strategies for improving quality of life and managing common symptoms and concerns faced by patients.[5]
- **Currently, assess to trustful education resources and behavioral interventions is limited and varies across cancer centers, potentially driving care disparities.**
- **Digital health may serve as a vehicle to empower patients towards self-management by democratizing access to educational resources and behavioral interventions.**
- Resilience PRO is a certified remote patient monitoring system using ePROs and nurse navigation.[6] We have co-designed and incorporated evidence-based educational and self-management programs that are delivered according to the patient's needs. Here we report the development and implementation process of these resources.

METHODS

The development process of the educational and self-management resources followed existing guidelines for co-designing and developing complex interventions.[7] A 6-step iterative process was followed:
1. Needs assessment and consultation with patients, providers and literature;
2. Ranking of symptoms/conditions to be tackled;
3. Identification of validated educational content and digitally-delivered self-management programs through formal literature review;
4. Prototype design, testing and improvement;
5. mobile app integration with real-world evaluation of usability and adoption;
6. refinement and formal efficacy evaluation in clinical trials.
This report focuses on phases 1–4.

RESULTS

- A total of 232 tumor-specific, 490 tumor-agnostic educational, and 42 peer support content were selected as a priority and therefore produced and incorporated in the system as: articles (375, 49%), videos (281, 37%) podcasts (108, 14%).
- The mean number of individual contents consumed from 01-2023 per RPM patient was 14.67 (38454/2622; 98.8% (2662/2654) of app users). Most accessed contents are presented in Figure 1 and 2.

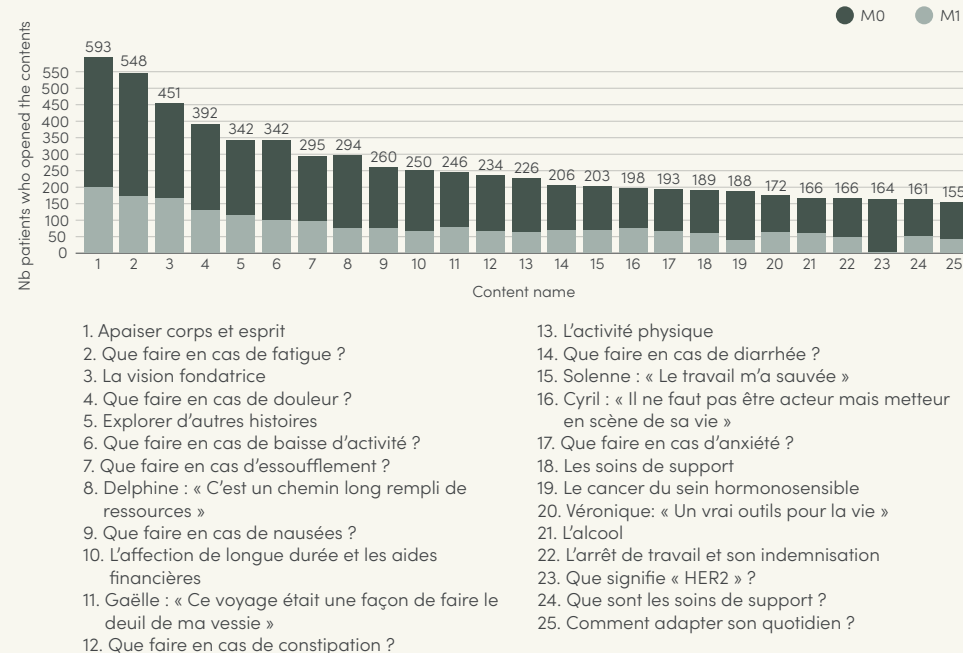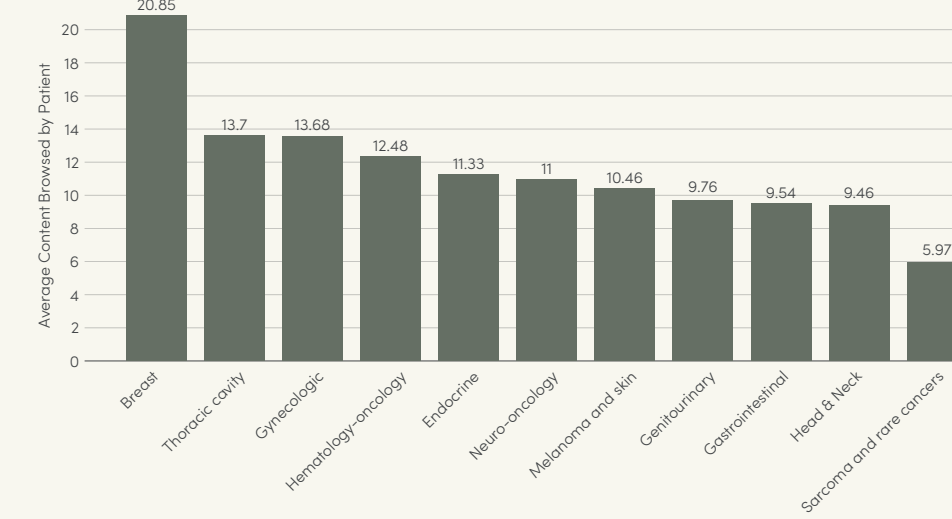Figure 1 – Top 25 most accessed content by metastatic status

1. Apaiser corps et esprit
2. Que faire en cas de fatigue ?
3. La vision fondatrice
4. Que faire en cas de douleur ?
5. Explorer d'autres histoires
6. Que faire en cas de baisse d'activité ?
7. Que faire en cas d'essoufflement ?
8. Delphine : « C'est un chemin long rempli de ressources »
9. Que faire en cas de nausées ?
10. L'affection de longue durée et les aides financières
11. Gaëlle : « Ce voyage était une façon de faire le deuil de ma vie »
12. Que faire en cas de constipation ?
13. L'activité physique
14. Que faire en cas de diarrhée ?
15. Solenne : « Le travail m'a sauvée »
16. Cyril : « Il ne faut pas être acteur mais metteur en scène de sa vie »
17. Que faire en cas d'anxiété ?
18. Les soins de support
19. Le cancer du sein hormonosensible
20. Véronique: « Un vrai outils pour la vie »
21. L'alcool
22. L'arrêt de travail et son indemnisation
23. Que signifie « HER2 »?
24. Que sont les soins de support ?
25. Comment adapter son quotidien ?

Figure 2 – Average content consumed by primary tumor type

RESULTS (CONT.)

- Six agnostic symptoms/conditions were selected as a priority to be tackled with digital self-management programs: **Emotional distress (Anxiety, Depression, Fear of Recurrence), Fatigue, Insomnia, Pain, Hot Flashes, Physical inactivity.**

- **Nine comprehensive asynchrone digital self-management programs focused on behavioral change (progressive education and guided exercises for autonomous practice) were conceptualized** to tackle priority symptoms/conditions. Of those, 6 are fully developed and reached 251 patients in an iterative way across the program co-design phases – Table.

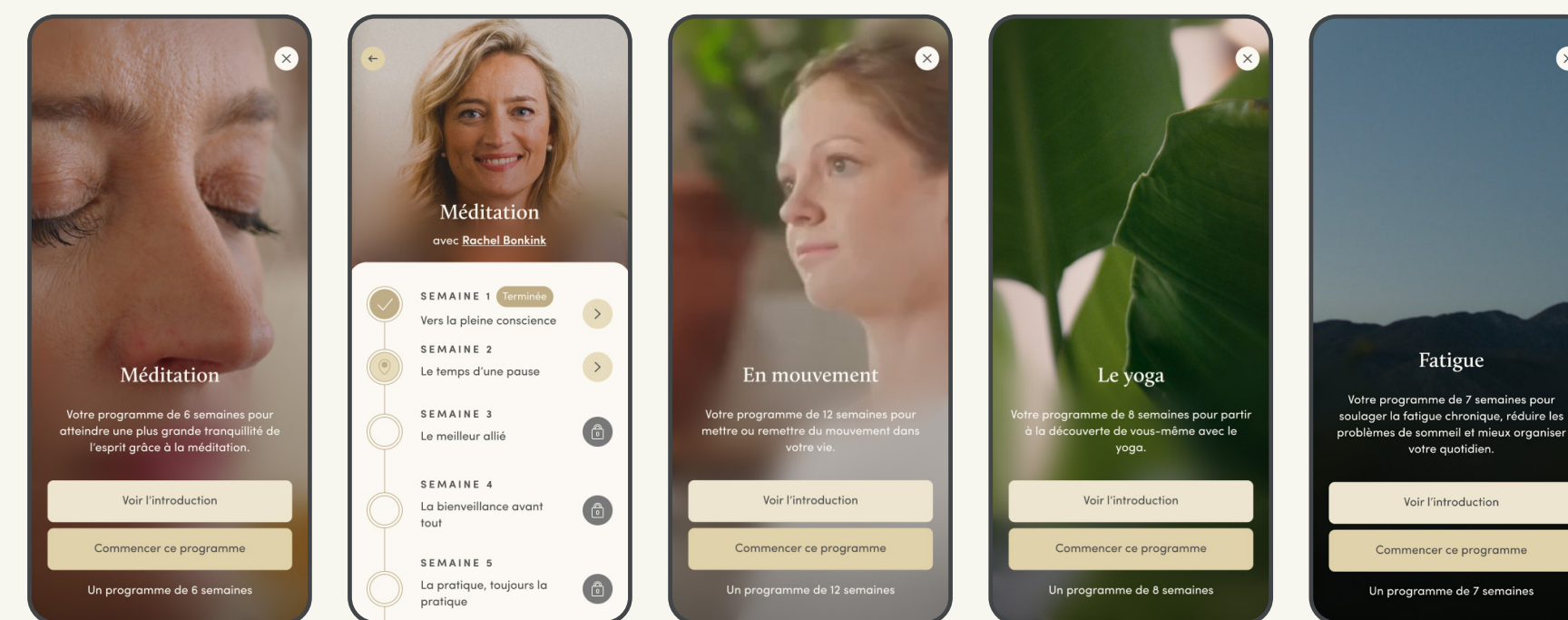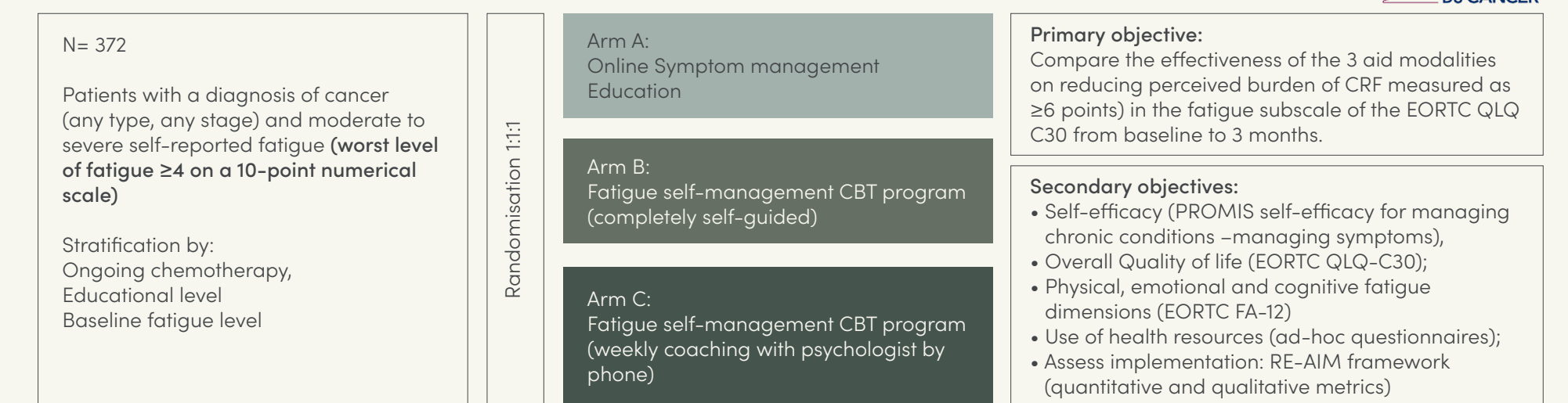Figure 3 – App screenshots of self-management programs (selected examples)

Table – Development of digital self-management programs focused on behavioral change interventions.
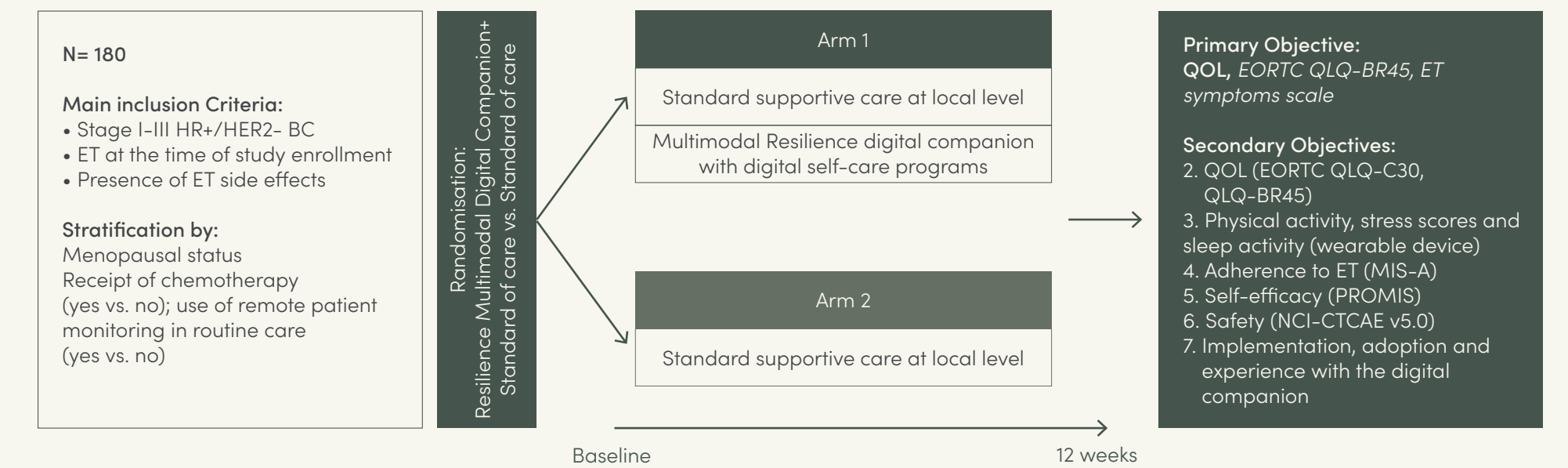
Self-management program	Main triggers for program enrollment	Prototype program co-development	Real world evaluation of adoption	Format efficacy evaluation in clinical trial
Yoga (Program duration: 8 weeks)	Patient self-reported: musculoskeletal pain, insomnia	Completed (n=6)	Completed (n=19)	Starting S2 2024
Meditation (Program duration: 6 weeks)	Patient self-reported anxiety, insomnia	Completed (n=11)	Completed (n=40)	Starting S2 2024
Adapted Physical Activity (Program duration: 12 weeks)	Patient self-reported musculoskeletal pain, anxiety, insomnia, physical inactivity, and higher body mass index	Completed (n=4)	Completed (n=17)	Starting S2 2024
CBT for Fatigue (Program duration: 7 weeks)	Patient self-reported fatigue	Completed (n=6)	Ongoing; 46 pts onboarded	Starting S2 2024
CBT for Anxiety (Program duration: 8 weeks)	Patient self-reported anxiety	Completed (n=4)	Ongoing; 25 pts onboarded	Starting S2 2024
CBT for Fear of Recurrence (Program duration: 7 weeks)	Patient self-reported anxiety and fear of recurrence	Completed (n=6)	Pending	Starting S2 2024
CBT for Insomnia (Program duration: 4 weeks)	Patient self-reported insomnia	Ongoing	Pending	Starting S2 2024
CBT for Hot Flashes (Program duration: 5 weeks)	Patient self-reported hot flashes	Ongoing	Pending	Starting S2 2024
CBT for Depression (Program duration: 8 weeks)	Patient self-reported depressive symptoms	Ongoing	Pending	Starting S2 2025

Figure 4 – Planned hybrid efficacy/implementation randomized clinical trials to evaluate the self-management programs.

STEPPING-STONe: STEpwise research Program to Promote INGeniouS ONline supportive solutions in the relief of cancer-related fatigue.
Program tested: CBT Fatigue.

N= 372

Patients with a diagnosis of cancer (any type, any stage) and moderate to severe self-reported fatigue (worst level of fatigue ≥4 on a 10-point numerical scale)

Stratification by:
Ongoing chemotherapy, Educational level Baseline fatigue level

Randomisation 1:1:1

Arm A: Online Symptom management Education

Arm B: Fatigue self-management CBT program (completely self-guided)

Arm C: Fatigue self-management CBT program (weekly coaching with psychologist by phone)

Primary objective:
Compare the effectiveness of the 3 aid modalities on reducing perceived burden of CRF measured as ≥6 points in the fatigue subscale of the EORTC QLQ C30 from baseline to 3 months.

Secondary objectives:
- Self-efficacy (PROMIS self-efficacy for managing chronic conditions –managing symptoms),
- Overall Quality of life (EORTC QLQ-C30);
- Physical, emotional and cognitive fatigue dimensions (EORTC FA-12);
- Use of health resources (ad-hoc questionnaires);
- Assess implementation: RE-AIM framework (quantitative and qualitative metrics)

HOPE: Phase II, randomized study to determine the efficacy of an holistic digital health pathway for patient empowerment to improve the quality of life of patients receiving adjuvant hormonal therapy for early breast cancer
Program tested: All programs.

N= 180

Main inclusion Criteria:
- Stage I-III HR+/HER2- BC
- ET at the time of study enrollment
- Presence of ET side effects

Stratification by:
Menopausal status
Receipt of chemotherapy (yes vs. no); use of remote patient monitoring in routine care (yes vs. no)

Randomization: Resilience Multimodal Digital Companion+ Standard of care vs. Standard of care

Arm 1
Standard supportive care at local level
Multimodal Resilience digital companion with digital self-care programs

Arm 2
Standard supportive care at local level

Baseline — 12 weeks

Primary Objective:
QOL, EORTC QLQ-BR45, ET symptoms scale

Secondary Objectives:
2. QOL (EORTC QLQ-C30, QLQ-BR45)
3. Physical activity, stress scores and sleep activity (wearable device)
4. Adherence to ET (MIS-A)
5. Self-efficacy (PROMIS)
6. Safety (NCI-CTCAE v5.0)
7. Implementation, adoption and experience with the digital companion

CONCLUSIONS

- We have co-designed and incorporated comprehensive education and behavioral interventions in a remote patient monitoring platform (Resilience PRO) to empower patients towards self-management.
- Randomized clinical trials will be launched to test the efficacy of these programs on symptom management and quality of life improvement.

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References: 1- Howell et al 2021; 2- Howell et al 2017; 3- Hana et al 2023; 4- Bower et al 2021; 5- Franzoi et al 2021; 6- Ferreira et al 2023; 7- Fernandez et al 2019