

Retrospective analysis of an electronic supportive care screening tool utilised for Cabrini cancer patients

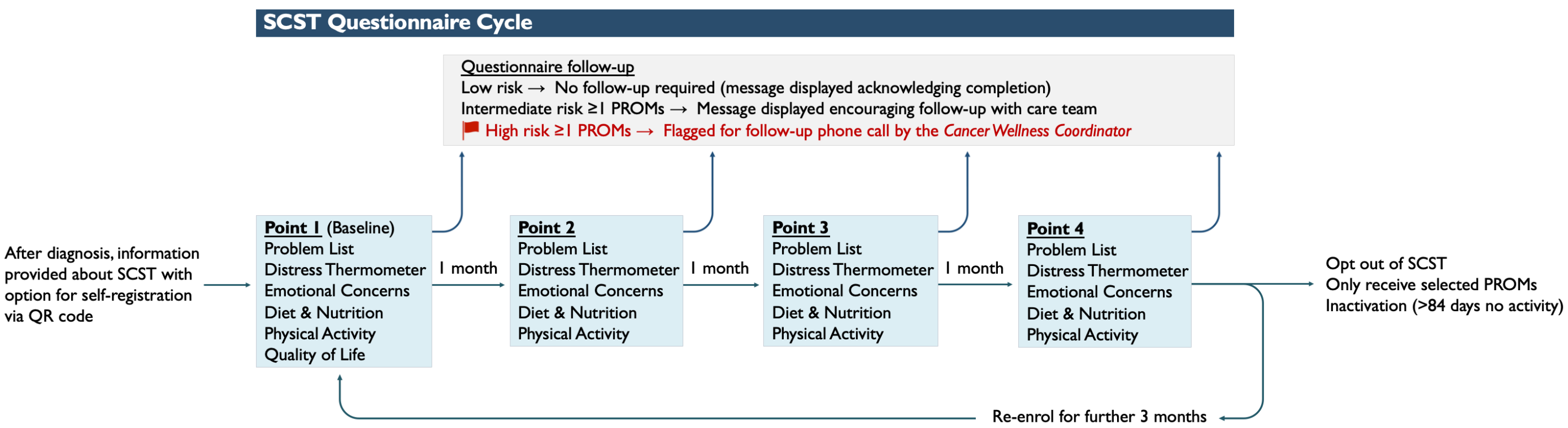
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Introduction

Advancements in cancer detection and therapies have markedly improved survivorship, however many patients experience significant and persisting physical, functional and psychosocial consequences.¹ **Cancer supportive care** refers to the provision of care necessary to address multifactorial patient needs, from diagnosis through treatment to post-treatment care, encompassing multidimensional support for patients and families.² Screening for patient-reported outcome measures (PROMs) promotes patient engagement, timely communication and opportune interventions, enhancing the therapeutic relationship and offering independent prognostic insights for cancer survival.³⁻⁵ To understand and address unmet multidisciplinary needs of our cancer patients, an **opt-in electronic supportive care screening tool (SCST)** was implemented via the eCaptis platform in 2022, enabling routine collection of PROMs via validated survey tools.

Objective | With the SCST now in routine clinical use for over 3 years, this project aims to analyse retrospective engagement and outcome data to evaluate its uptake and efficacy, and further support program development.



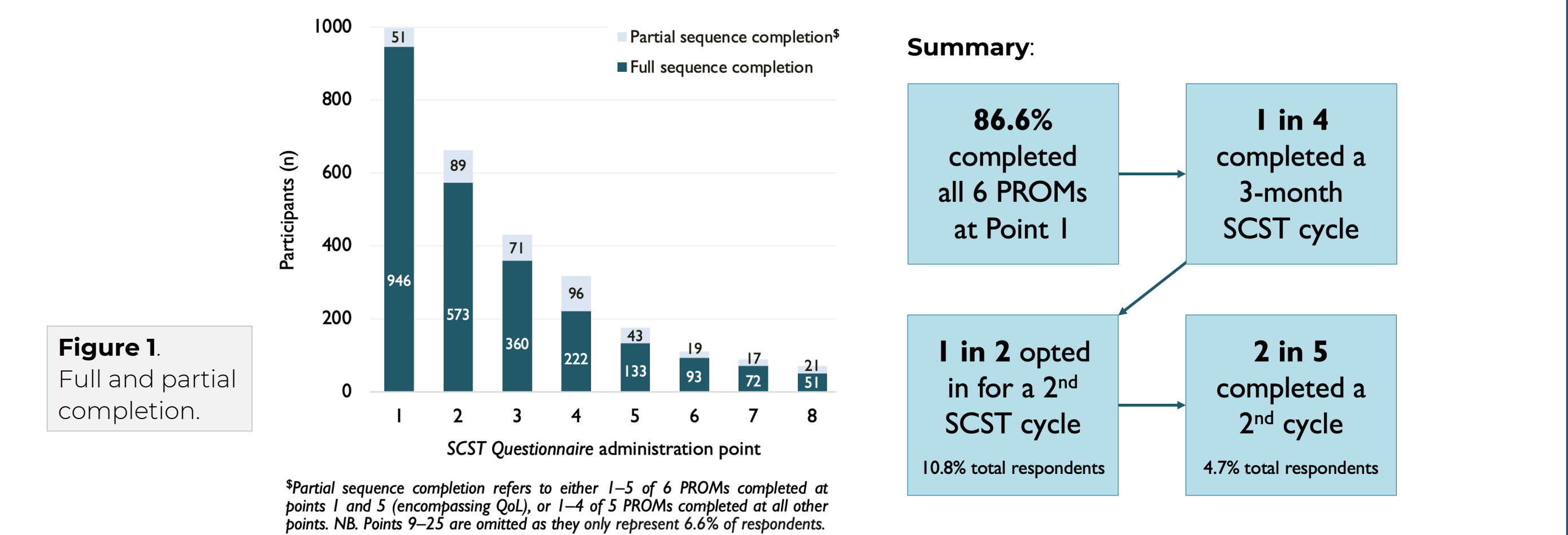
Methodology

- Measures | Individual PROMs**
- Problem List** – adapted from the NCCN 12-item Problem List (predominantly functional/practical)⁶
 - Distress Thermometer**⁶ – 10-point scale
 - Emotional Concerns** – 20-point scale adapted from the PROMIS Emotional Distress short form item banks⁷
 - Diet & Nutrition** – MST⁸ 6-point scale
 - Physical Activity** – 13-point scale adapted from the IPAQ⁹ and WHO GPAQ¹⁰
 - Quality of Life (QoL)** – EORTC QLQ-C30 v3.0¹¹
- Participants whose responses met predefined high-risk thresholds were contacted by the Cancer Wellness Coordinator within the Cabrini Cancer Exercise and Wellness Centre (CEWC).
- Design** | Retrospective analysis of de-identified PROMs responses obtained from eCaptis completed **1st August 2022 – 31st December 2024**.
- Participants** | **1,151 self-registered participants** aged ≥18 years who completed ≥1 PROMs during and/or following any treatment modality for any tumour stream.
- Analyses**
- Sex, age & repeated survey measures → multivariable linear mixed-effects model and one-way ANOVA with Tukey's HSD post-hoc pairwise comparisons
 - QoL reference comparisons → independent samples t-tests (Welch's correction, $p < 0.05$)
 - High-risk survey outcomes → thematic response coding with descriptive analysis

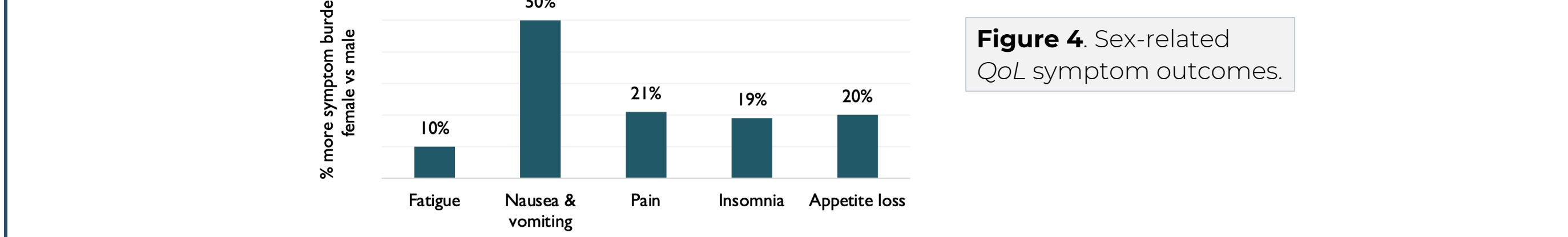
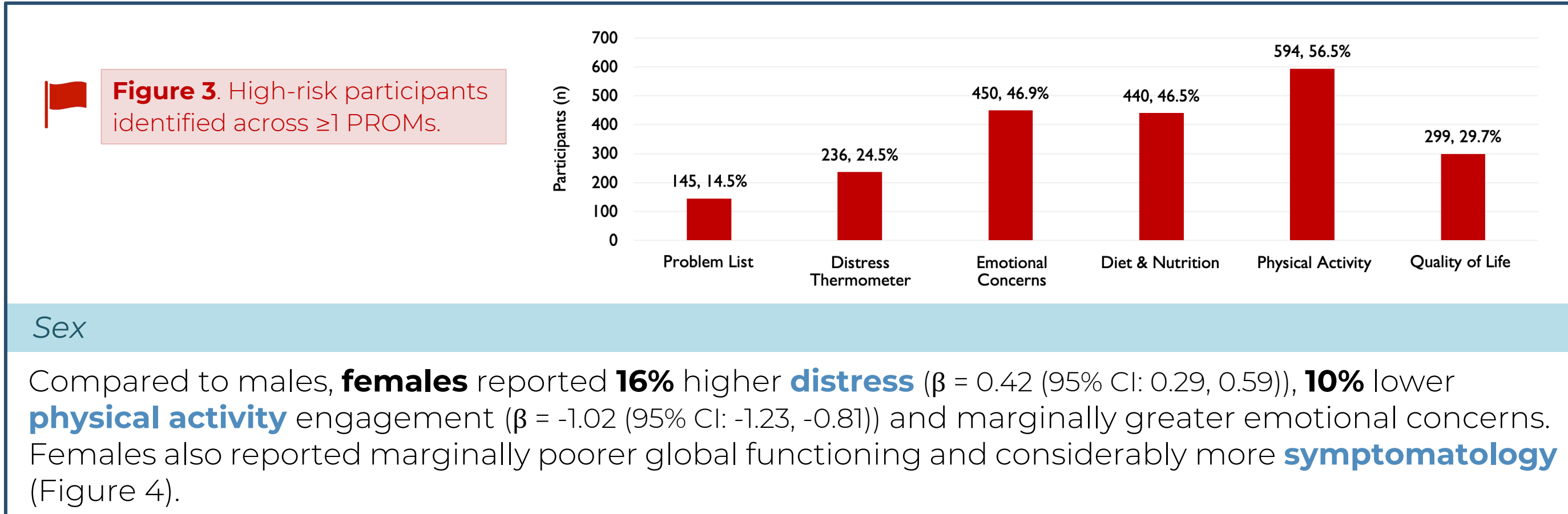
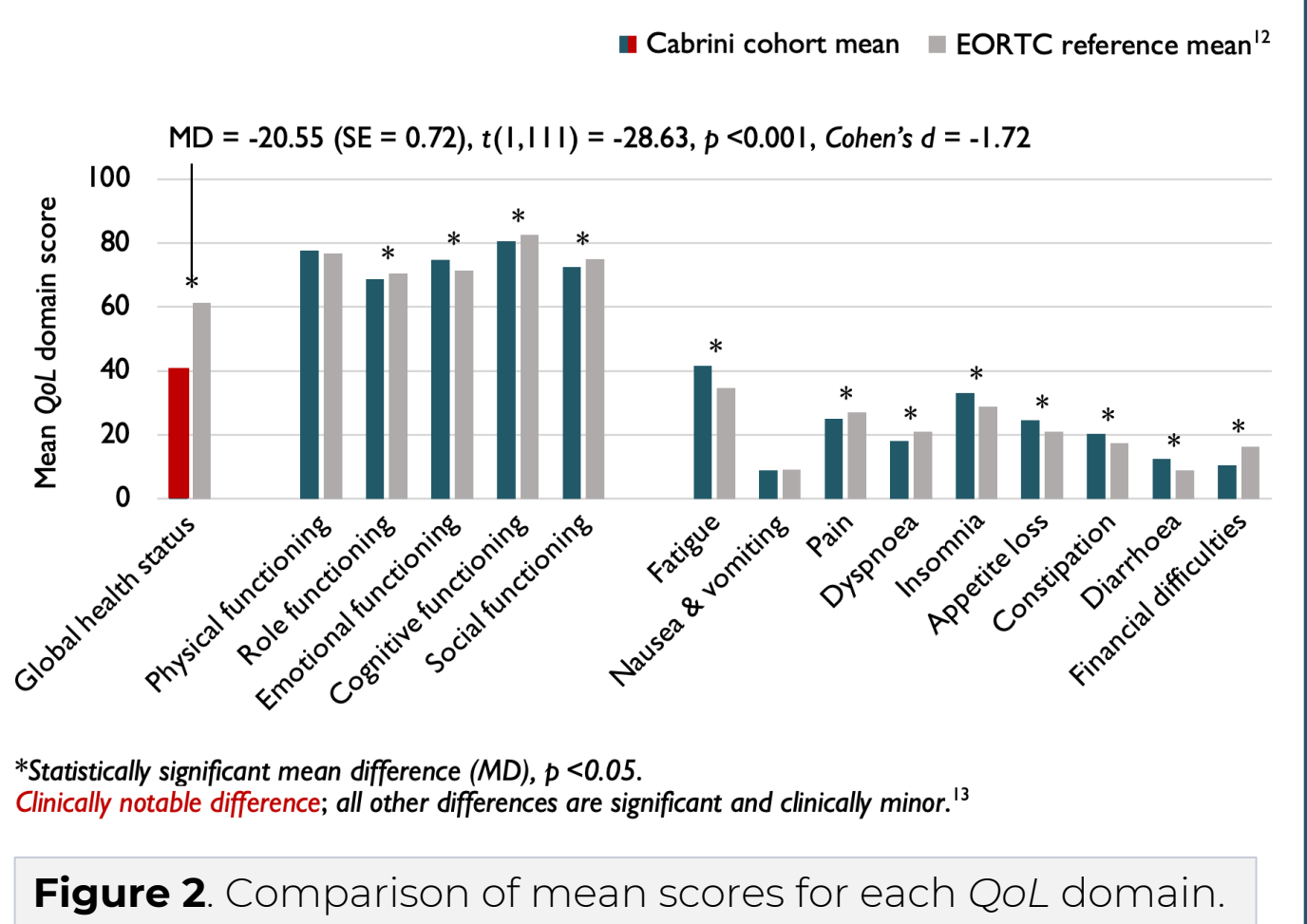
Results

- Demographics**
- Mean age **66.9 years** (range 24–96); **65.6% female** (mean 64.3 years), **34.2% male** (mean 70.7 years) and 0.3% unspecified gender (mean 46.7 years).
 - 10 tumour streams** reported: *breast* (23.1%), *haematological* (16.4%), *colorectal* (13.3%), *upper GI & HPB* (11.0%), *gynaecological* (10.9%), *lung* (7.7%), *genitourinary* (5.0%), *melanoma & other skin* (4.5%) and *brain* (1.1%).
 - Of those who specified, **95.1%** received chemoimmunotherapy in day oncology and/or surgical treatment at Cabrini, and **6.5%** received radiotherapy at GenesisCare (2.7% received both).

- Completion rates**
- Individual PROMs**
- 1,051 participants (91.3%)** completed a total of **14,971 surveys** → **76.2% overall completion rate**.
 - 87.5%** ($n = 1,007$) completed the QoL survey; **82.2–86.9%** completed all others.
- SCST Questionnaire**
- 1,093 participants (95.0%)** received the questionnaire (i.e., sequence of 6 PROMs) at baseline.



- Key outcomes**
- General cohort**
- Problem List** | **Access to services** → most frequently cited problem (**38.0%**), followed by treatment decisions (**27.9%**) and relationship/communication with children (**24.2%**) and partner (**23.0%**).
- Distress Thermometer** | **46.9%** rated their distress as **moderate or high/extreme** at ≥1 points (i.e., score ≥7/10).
- Emotional Concerns** | **Worry** → most frequently reported emotional concern (**90.3% surveys**); **34.0%** respondents rated as **moderate/severe**. Nervousness, anhedonia and sadness (**each ~84% surveys**); **~25%** rated as moderate/severe.
- Diet & Nutrition** | **51.0%** reported loss of appetite and **58.1%** indicated losing weight, **1–5 kilograms** → most common weight loss (**28.1%**).
- Physical Activity** | **75.6%** indicated **treatment-related symptoms/impairments** limited their capacity for physical activity; **61.6%** reported avoiding/altering usual activity since diagnosis.
- Quality of Life** | At baseline, Cabrini participants reported markedly lower **global health status** (**+34%**) compared to EORTC global reference values for cancer patients (Figure 2).^{12,13} Respondents also reported more fatigue and insomnia, however fewer financial difficulties by comparison.¹²



Sex

Compared to males, **females** reported **16%** higher **distress** ($\beta = 0.42$ (95% CI: 0.29, 0.59)), **10%** lower **physical activity** engagement ($\beta = -1.02$ (95% CI: -1.23, -0.81)) and marginally greater emotional concerns. Females also reported marginally poorer global functioning and considerably more **symptomatology** (Figure 4).

Table 1. PROMs comparisons by age strata.

PROM (Scale)	Age Strata Comparisons	≤50 years	51–75 years	≥76 years
Problem List (12)		2.05 (2.89) ^{ab}	0.99 (1.75)	1.15 (1.83)
Distress Thermometer (10)		4.37 (2.59) ^{ab}	2.70 (2.55)	2.84 (2.63)
Emotional Concerns (20)		9.31 (3.82) ^{ab}	7.25 (3.62)	7.52 (3.94)
Diet & Nutrition (6)		1.43 (1.57)	1.35 (1.55)	1.78 (1.60) ^b
Physical Activity (13)		7.11 (3.15)	6.60 (3.14)	7.67 (3.04) ^b

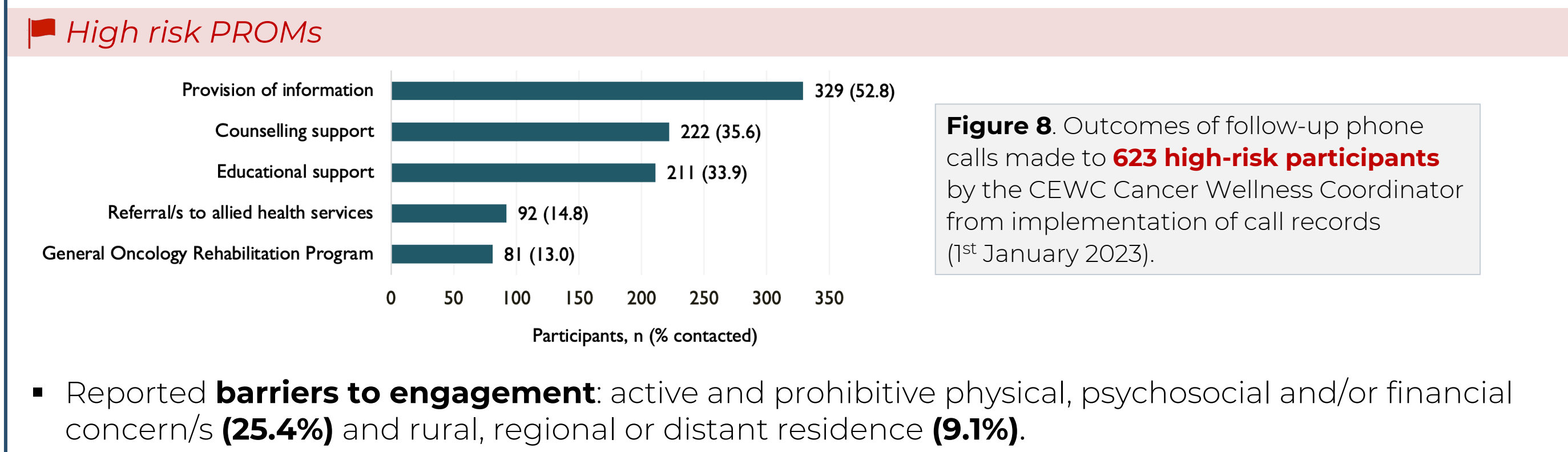
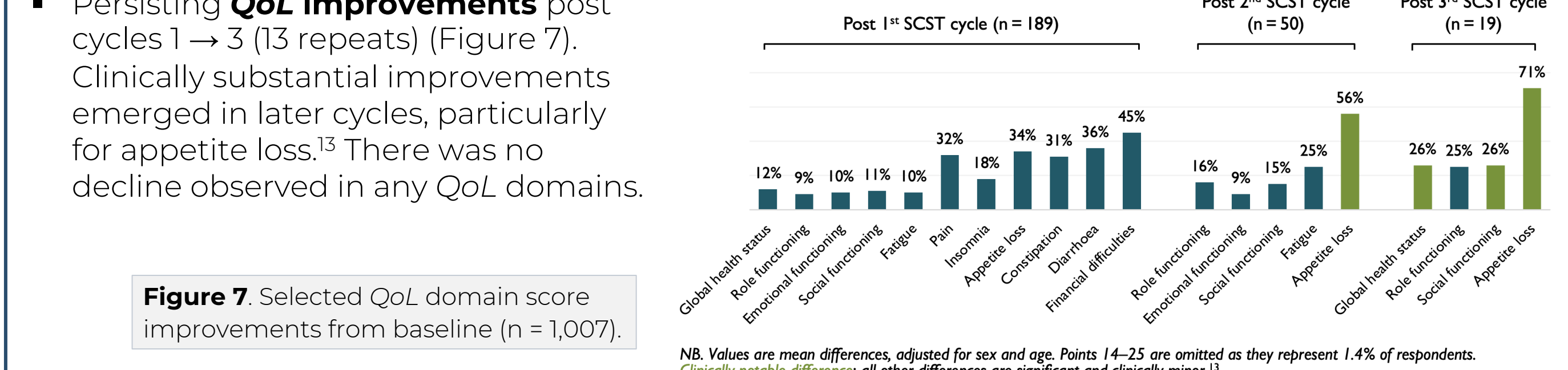
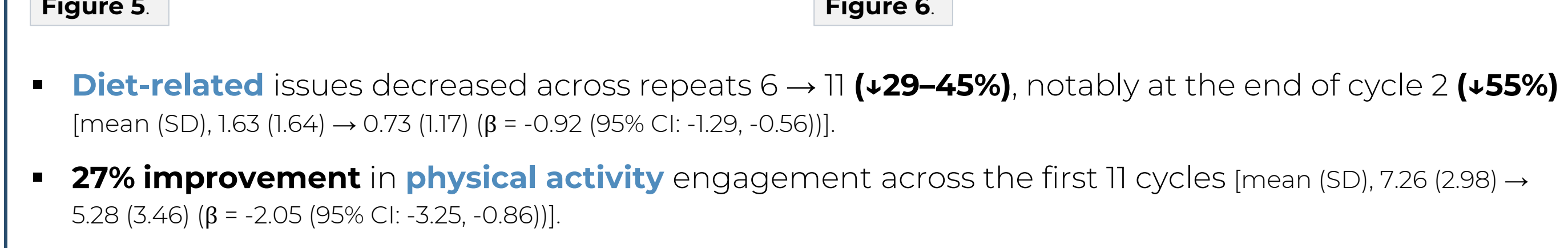
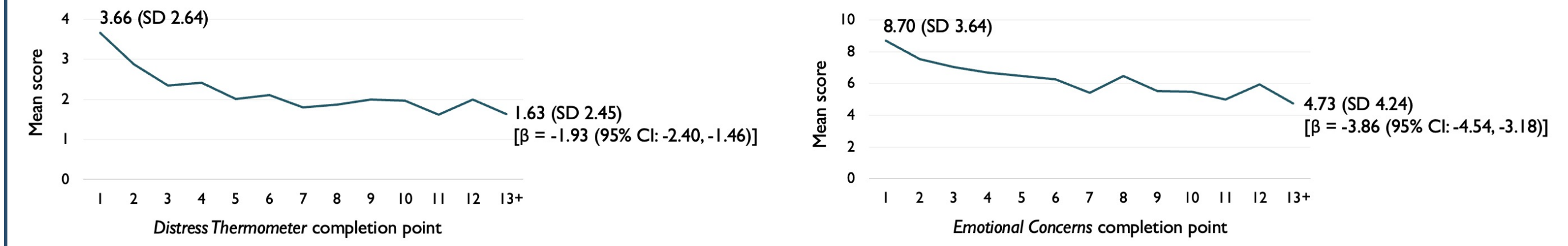
NB. Values are means (SD), adjusted for sex and survey repeat.
*Significantly higher scores compared to those aged ≥76 years ($p < 0.001$).
*Significantly higher scores compared to those aged 51–75 years ($p < 0.001$).
Intermediate risk scores; low risk scores.

Table 2. QoL age strata comparisons by domain.

QoL Domain	Age Strata Comparisons	≤50 vs 51–75 years	≤50 vs ≥76 years	≥76 vs 51–75 years
Global health status		ND	ND	ND
Functional Scales				
Physical		ND	10.47 (5.15, 15.79)	-10.09 (-13.47, -6.69)
Role		ND	ND	ND
Emotional		-13.54 (-18.16, -8.92)	-14.21 (-19.14, -9.27)	ND
Cognitive		-9.56 (-14.56, -4.55)	-7.93 (-13.27, -2.58)	ND
Social		-8.06 (-14.53, -1.59)	-7.37 (-14.28, -0.46)	ND
Symptom/Issue Scales				
Fatigue		8.32 (0.83, 15.81)	ND	ND
Nausea & vomiting		6.96 (3.48, 10.45)	6.99 (3.27, 10.71)	ND
Pain		ND	9.07 (2.47, 15.67)	ND
Dyspnoea		ND	ND	4.82 (0.83, 8.81)
Insomnia		ND	8.99 (1.67, 16.30)	ND
Appetite loss		ND	ND	6.22 (1.65, 10.79)
Constipation		ND	ND	ND
Diarrhoea		ND	ND	ND
Financial difficulties		14.66 (9.56, 19.76)	18.00 (12.55, 23.45)	ND

NB. Values are mean differences (95% CI), adjusted for sex and survey repeat.
ND, no difference. Clinically notable difference; all other differences are significant and clinically minor.¹³

- Repeated survey outcomes**
- ~Doubling of problems** reported across the first 2 SCST cycles (8 repeats) [mean (SD), 0.81 (1.68) → 1.68 (2.27) ($\beta = 0.98$ (95% CI: 0.57, 1.40))].
 - Robust decrease in **distress** (**+55%**) and **emotional concerns** (**+46%**) across all repeats, with increasing effect size (Figures 5 & 6).



- Reported **barriers to engagement**: active and prohibitive physical, psychosocial and/or financial concern/s (**25.4%**) and rural, regional or distant residence (**9.1%**).

Conclusions

- All PROMs and the SCST Questionnaire demonstrated strong baseline completion rates, with attrition throughout the first cycle and a minority opting into ongoing PROMs.
- Distress and emotional burden were prevalent across the cohort, as were issues around service accessibility, communication, nutrition and physical activity engagement. Self-rated global health was poorer than expected at baseline.
- Findings revealed the highest physical and psychosocial burden amongst female and younger patients.
- Within the context of limitations (i.e., limited eCaptis output, no comparative premorbid or randomised data, heterogeneous cohort at different treatment stages) and minority persistence, repeated survey completions were associated with improvements in distress, emotional concerns, diet and nutrition, physical activity and aspects of life quality.
- Though many high-risk patients were engaged, ongoing refinement of the tool based on analysis and patient feedback will strengthen its role in supportive care delivery, including resourcing and program development, particularly given the prevalent nature of problems and barriers.

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