# AROMATHERAPY IN CANCER SUPPORTIVE CARE (ASTER): AN ACCEPTABILITY STUDY IN BREAST CANCER PATIENTS

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## Introduction & Aim

Cancer patients often experience distressing symptoms which impact their quality of life and treatment adherence. Despite global interest in aromatherapy as a complementary therapy, its application in cancer care remains underexplored in Singapore.

The primary aim of this pilot study is to evaluate the acceptability of inhalation aromatherapy intervention, in addition to standard therapies, for management of common cancer-related symptoms, namely anxiety, insomnia and nausea among breast cancer patients. Secondary outcomes include preliminary efficacy data.

## Study Design

This was an open label, prospective study of patients attending outpatient clinics at the National Cancer Centre Singapore (NCCS). Breast cancer patients aged ≥21 years old with self-reported distress from anxiety, insomnia, or nausea were recruited.

Participants were asked to select and utilize an aromatherapy inhalation product specific for their symptom for a 7-day intervention period. Data was collected at baseline and post-intervention using structured feedback survey, patient diaries and validated scales.
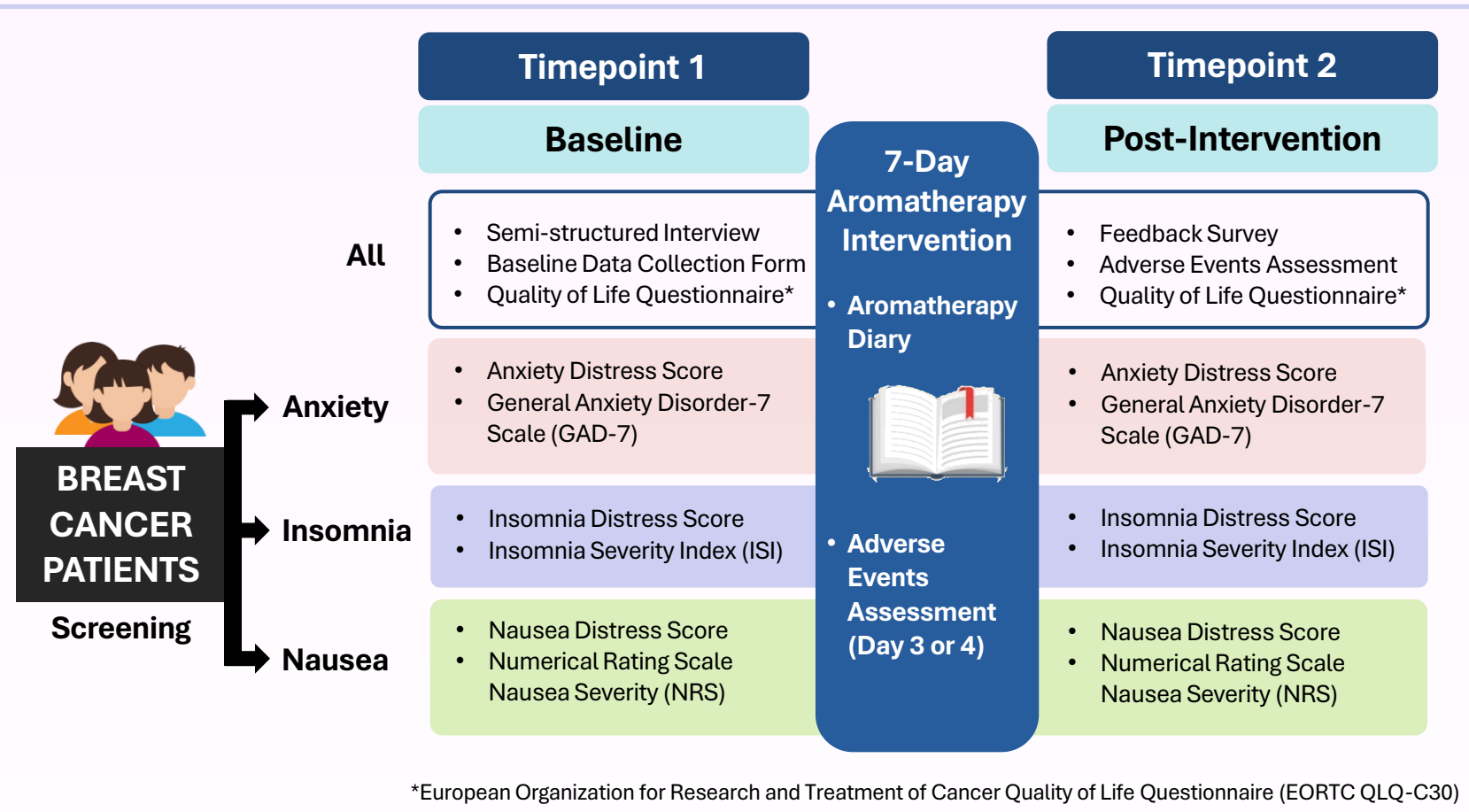


Figure 1. ASTER Study Design

## Results

**Primary Aims**

**Feasibility** ✓
- Study completed within projected 2-year study period **(17 months)**
- 30/36 (83%) of eligible patients enrolled into study & agreed to use aromatherapy

**Acceptability** ✓
- 30/30 (100%) of recruited patients completed all time points & utilized aromatherapy at least once during intervention period
- >50% of recruited patients rated at least "Good" for symptoms, relaxation, wellbeing, scent, ease of use, convenience, would use again and recommend to others

**Secondary Aims**

**Efficacy**
- Statistically significant reduction in GAD-7, ISI, NRS symptom scores
- **Qualitative Interview** (Analysis pending)
- Patients' perception on aromatherapy as complementary therapy
- Feedback on implementing aromatherapy service

**Safety**
- No serious adverse events reported
- All reported adverse events unlikely/ not related except 2 possibly related - G1 nausea, G1 dry throat

A total of 30 patients were included in analysis. **All patients utilized the aromatherapy intervention at least once during the 7-day intervention period, demonstrating the acceptability of aromatherapy.** More than half of patients rated the aromatherapy intervention at least "Good" in terms of scent (22/30, 73.3%), ease of use (26/30, 86.7%) and convenience (25/30, 83.3%). Majority felt that the intervention met their expectations (19/30, 63.3%), would utilize it again (23/30, 76.6%) and would recommend it to others (28/30, 93.3%).
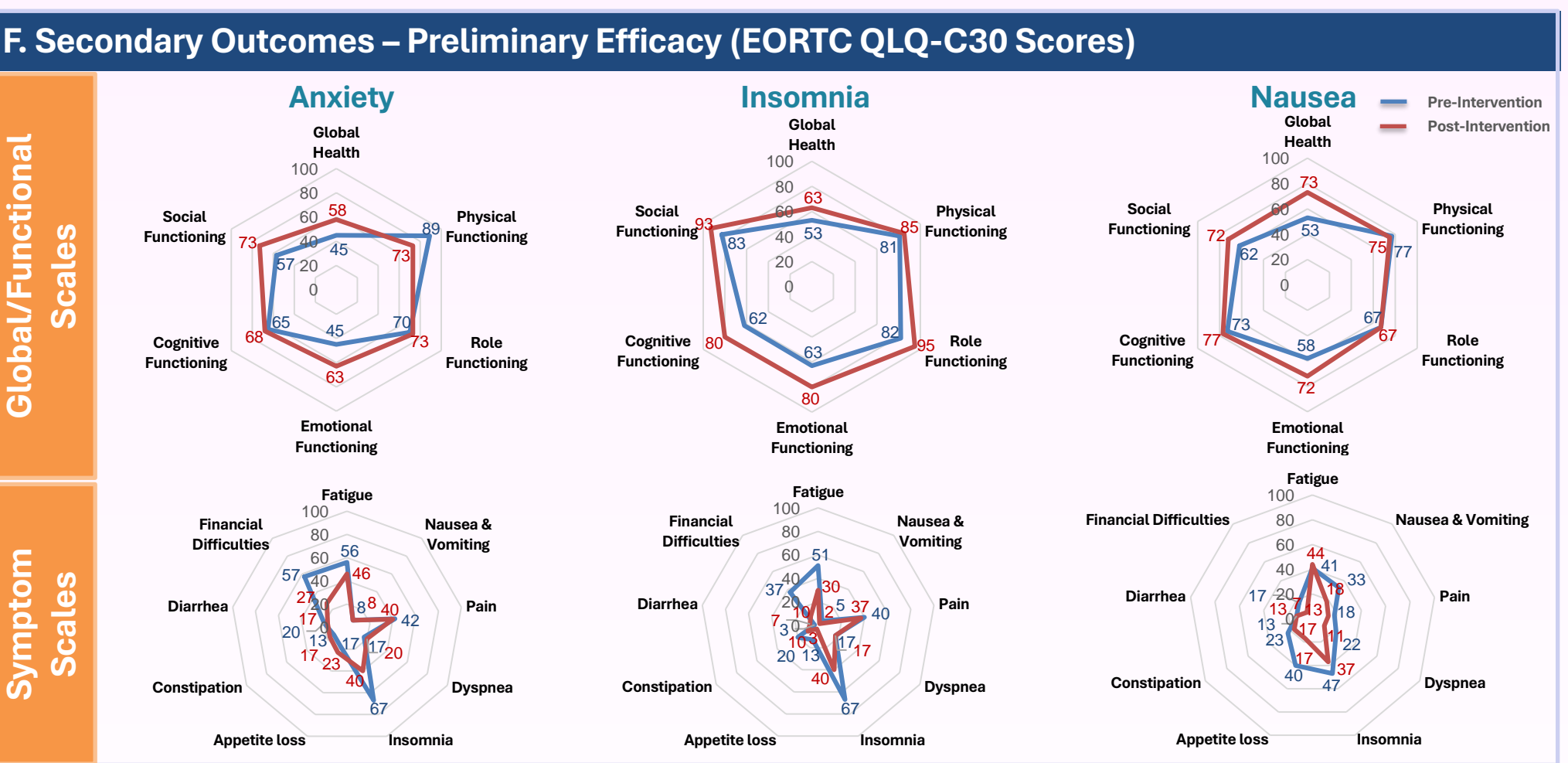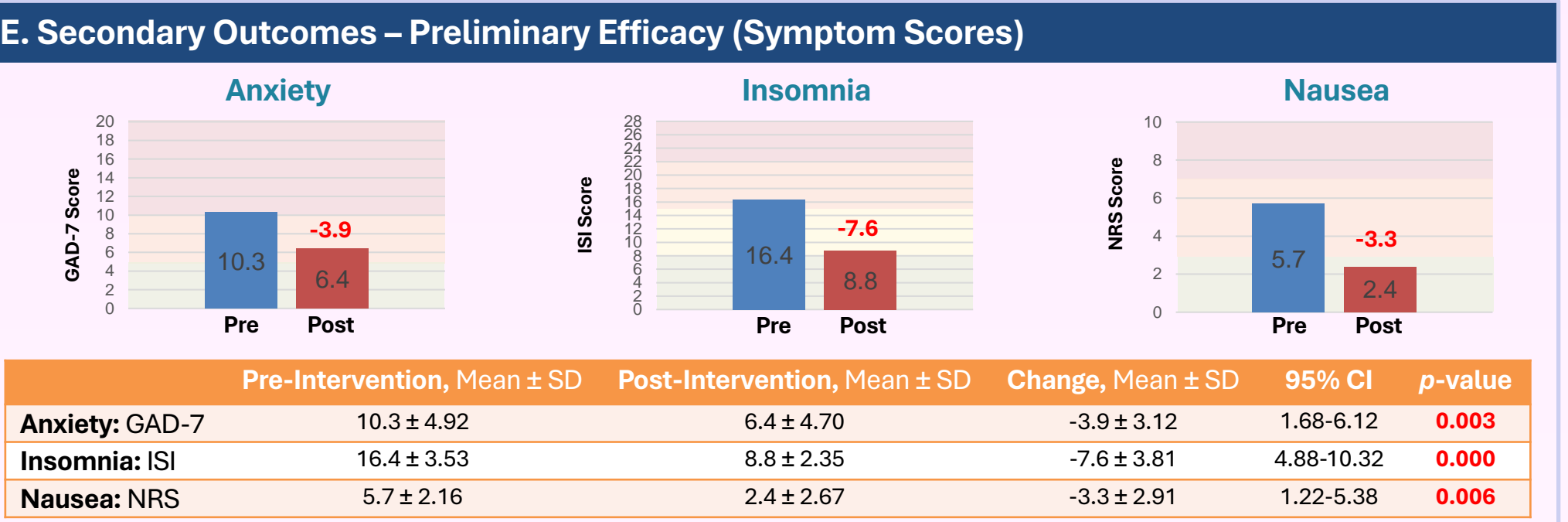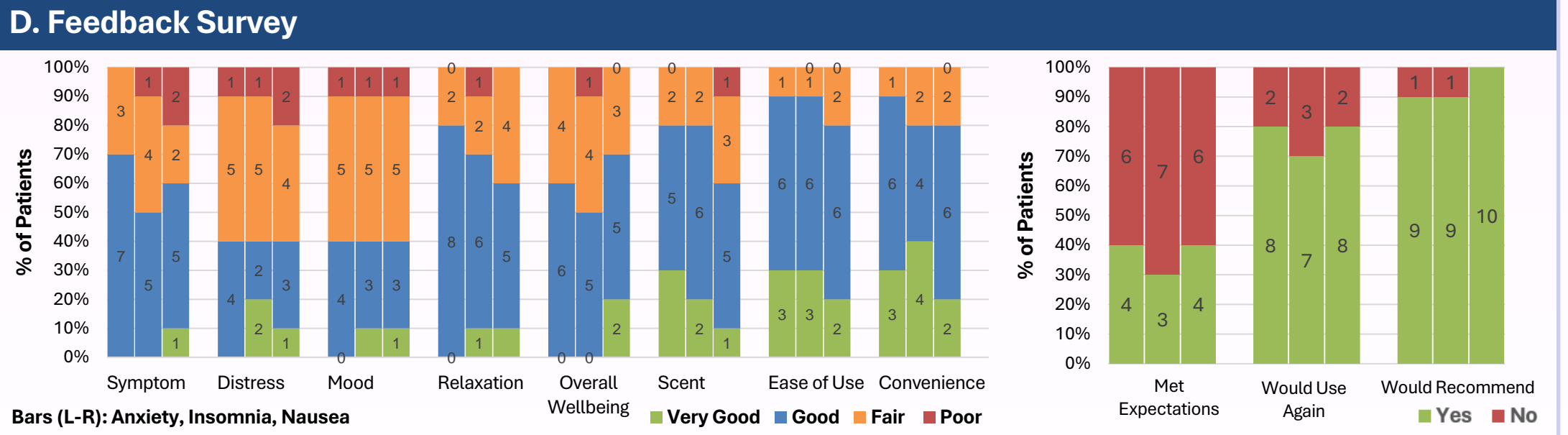
### A. Screening & Recruitment



### B. Recruitment Period

| | Time Required |
|---|---|
| Anxiety (n=10) | 10 months |
| Insomnia (n=10) | 12 months |
| Nausea (n=10) | 17 months |

### C. Patient Demographics

| | Anxiety (n=10) | Insomnia (n=10) | Nausea (n=10) |
|---|---|---|---|
| **Female, n (%)** | 10 (100%) | 10 (100%) | 10 (100%) |
| **Age (years),** Mean ±SD (Min-Max) | 50.8 ± 7.8 (32-61) | 51.9 ± 8.9 (38-65) | 43.3 ± 13.6 (23-73) |
| **Race, n (%)** | | | |
| Chinese | 5 (50%) | 8 (80%) | 8 (80%) |
| Indian | 3 (30%) | 2 (20%) | 1 (10%) |
| Malay | 1 (10%) | 0 (0%) | 0 (0%) |
| Others | 1 (10%) | 0 (0%) | 1 (10%) |
| **Breast cancer, n(%)** | 10 (100%) | 10 (100%) | 10 (100%) |
| **Cancer stage, n(%)** | | | |
| I-III | 8 (80%) | 8 (80%) | 10 (100%) |
| IV | 2 (20%) | 2 (20%) | 0 (0%) |
| **Treatment intent, n(%)** | | | |
| Curative | 8 (80%) | 7 (70%) | 9 (90%) |
| Palliative | 2 (20%) | 2 (20%) | 0 (0%) |
| Surveillance | 0 (0%) | 1 (10%) | 1 (10%) |
| **ECOG*, n(%)** | | | |
| 0 | 2 (20%) | 3 (30%) | 3 (30%) |
| 1 | 8 (80%) | 7 (70%) | 6 (60%) |
| 2 | 0 (0%) | 0 (0%) | 1 (10%) |

*Eastern Cooperative Oncology Group Performance Status

### D. Feedback Survey



Bars (L-R): Anxiety, Insomnia, Nausea

Figure 2. Study Results

### E. Secondary Outcomes – Preliminary Efficacy (Symptom Scores)



| | Pre-Intervention, Mean ± SD | Post-Intervention, Mean ± SD | Change, Mean ± SD | 95% CI | p-value |
|---|---|---|---|---|---|
| **Anxiety:** GAD-7 | 10.3 ± 4.92 | 6.4 ± 4.70 | -3.9 ± 3.12 | 1.68-6.12 | **0.003** |
| **Insomnia:** ISI | 16.4 ± 3.53 | 8.8 ± 2.35 | -7.6 ± 3.81 | 4.88-10.32 | **0.000** |
| **Nausea:** NRS | 5.7 ± 2.16 | 2.4 ± 2.67 | -3.3 ± 2.91 | 1.22-5.38 | **0.006** |

### F. Secondary Outcomes – Preliminary Efficacy (EORTC QLQ-C30 Scores)



## Conclusion

The ASTER study demonstrates the acceptability of aromatherapy as adjunct supportive care intervention for management of common cancer-related symptoms, in breast cancer patients in Singapore. These findings provide a foundation for larger, randomized trials to evaluate its effectiveness and inform future clinical guidelines for complementary therapy in oncology.