

# Real-World Evidence on Health-Related Quality of Life in Older Women with Advanced Breast Cancer Treated with CDK 4/6 Inhibitors

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## BACKGROUND

- Breast cancer remains the most common cancer and the second leading cause of cancer-related deaths among women in the U.S.
- Health-related quality of life (HRQoL) has become a key consideration in breast cancer treatment, given the significant physical and psychological burdens patients face.
- The standard treatment for hormone receptor-positive (HR+)/HER2-negative (HER2-) advanced breast cancer (aBC) involves combining cyclin-dependent kinase 4/6 inhibitors (CDK4/6i) with endocrine therapy (ET).
- However, real-world evidence on the impact of CDK4/6i on HRQoL remains limited.

## OBJECTIVES

- To compare HRQoL between ET monotherapy and ET + CDK 4/6i in older women with advanced Breast Cancer

## METHODS

### Data Source

- The 2007-2020 Surveillance, Epidemiology and End Results (SEER)-Medicare Health Outcomes Survey (MHOS) data

### Study Population (Fig 1)

#### Patients were included if they:

- Were female and aged 65 years or older
- Were diagnosed with HR+/HER2- advanced (stage IV or distant) breast cancer
- Received ET monotherapy or ET+CDK 4/6i combination therapy
- Were surveyed starting in 2015
- Were surveyed within two years of ET or CDK 4/6i initiation

### Key Variables

#### Outcomes

- HRQoL from VR-12 health survey
  - Physical component summary scores (PCS)
  - Mental component summary scores (MCS)
  - Eight sub-scales measures

#### Primary predictor

- CDK 4/6i use: palbociclib, ribociclib, abemaciclib

#### Covariates

- Sociodemographic:** age, race, regions, education level, household income, housing, marital status
- Clinical:** cancer grade, surgery, radiation, comorbidity (CCI), obesity
- Survey:** survey respondent, survey year, period from treatment initiation to survey

### Statistical Analysis

Addressing missing values: MICE model (10 iterations)

Multivariate linear regression models

## RESULTS

Fig 1. Study sample selection

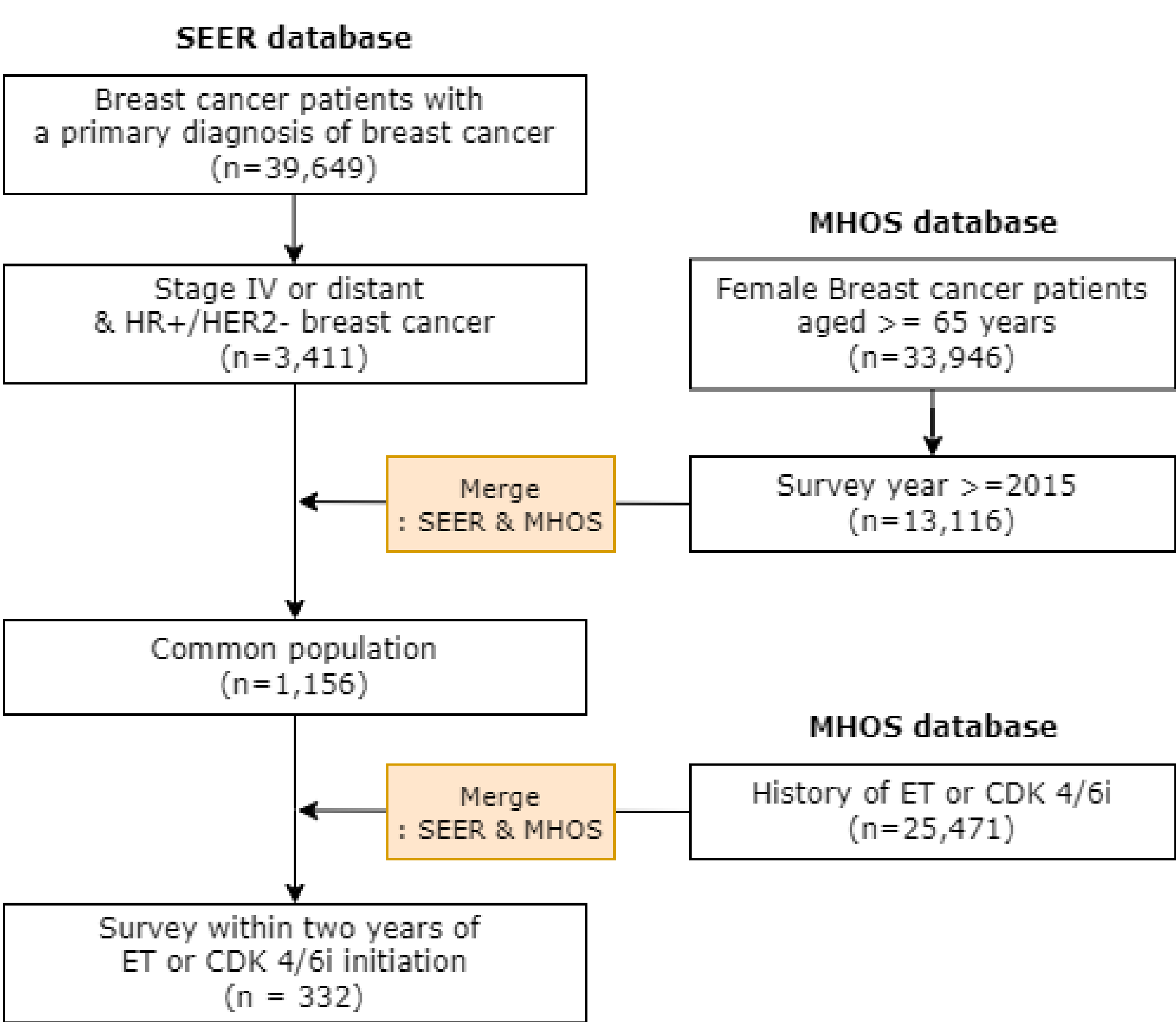
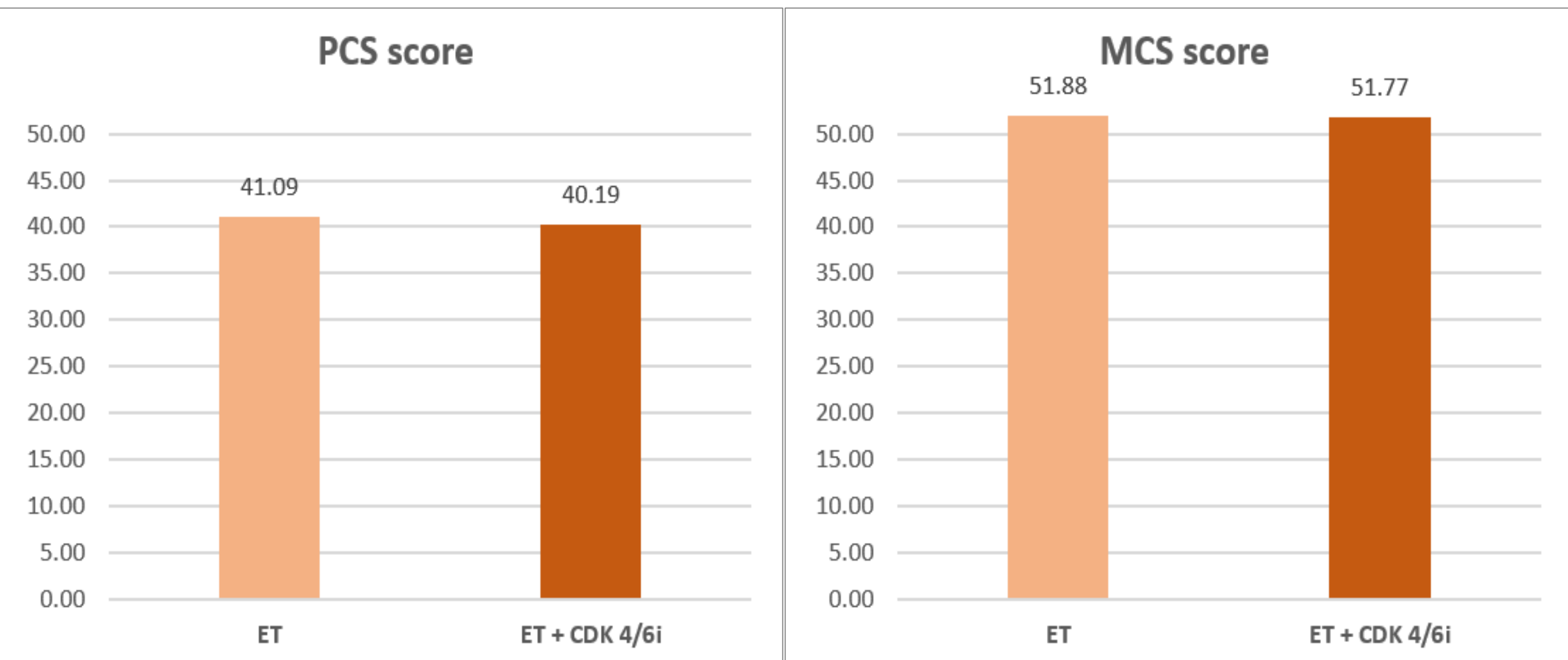


Table 1. Baseline characteristics

	ET mono (N = 287) N (%)	ET + CDK 4/6i (N = 45) N (%)	p
Age (mean, SD)	75.21 (6.74)	73.84 (5.95)	0.157
Breast-conserving surgery			
Yes	79 (27.53)	4 (8.89)	0.007
No	208 (72.47)	41 (91.11)	
Race/Ethnicity			
White	181 (63.07)	29 (64.44)	0.341
Black	41 (14.29)	4 (8.89)	
Hispanic	46 (16.03)	6 (13.33)	
Others	19 (6.62)	6 (13.33)	
Comorbidities			
0-1	73 (27.86)	14 (33.33)	0.267
2	60 (22.9)	5 (11.90)	
3+	129 (49.24)	23 (54.76)	
Survey year			
2015-2016	143 (49.83)	12 (26.67)	<0.0001
2017-2018	112 (39.02)	15 (33.33)	
2019-2021	32 (11.15)	18 (40)	

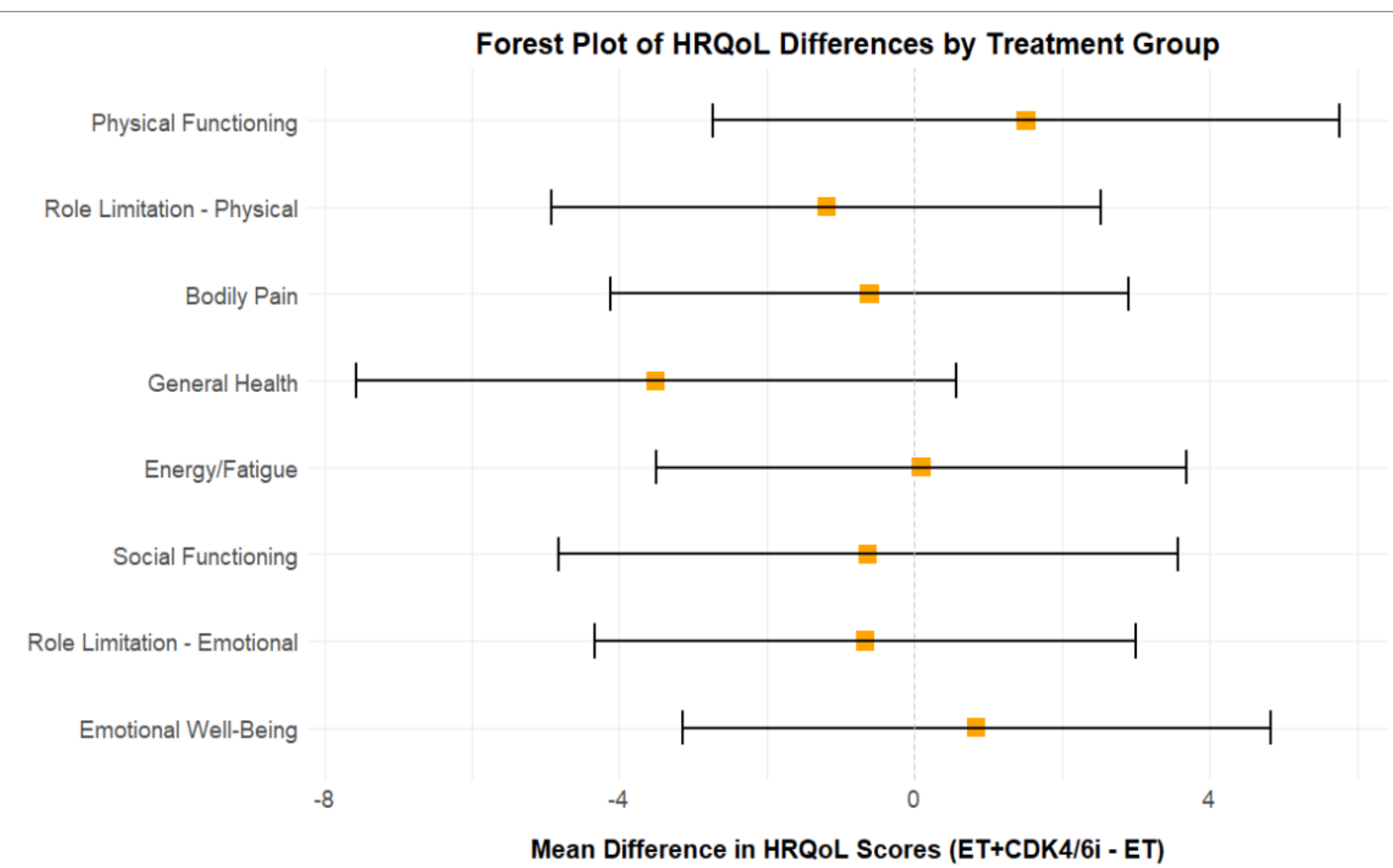
Fig 2. Predicted mean PCS and MCS scores



- No significant mean differences were observed in predicted PCS or MCS scores between the two groups (Fig 2)
  - PCS score: -0.90 [-4.76 – 2.97]
  - MCS score: -0.12 [-4.01 – 3.78]

Fig 3. Predicted mean differences of eight health domains between two groups

- No significant mean differences were observed in HRQoL scores of eight domains between the two groups (Fig 3)
  - Physical Functioning: 1.51 [-2.74 – 5.76]
  - Role Limitation-physical : -1.19 [-4.92 – 2.53]
  - Bodily Pain: -0.61 [-4.12 – 2.90]
  - General Health: -3.51 [-7.57 – 0.56]
  - Energy/Fatigue: 0.09 [-3.50 – 3.68]
  - Social Functioning: -0.63 [-4.83 – 3.57]
  - Role Limitation-emotional : -0.67 [-4.33 – 2.99]
  - Emotional Well-being: 0.84 [-3.15 – 4.83]



## CONCLUSIONS

### Limitations

- The study population was limited to Medicare Advantage beneficiaries, which may restrict the generalizability of findings to the other population.
- The identification of comorbidities relied on self-reported questionnaires, introducing the possibility of recall bias.
- There was a disproportion in sample size between the two groups, which may have affected the statistical power of comparisons.

### Strengths

- This population-level study provides the first real-world evidence comparing HRQoL between ET monotherapy and ET combined with CDK 4/6i in older women with advanced breast cancer.
- The study accounted for multiple confounding factors as covariates to enhance the accuracy of assessing the relationship between treatment and HRQoL.

### Implications

- The addition of CDK 4/6i to ET provides clinical benefits without compromising patients' HRQoL, supporting its use in this population in the real-world settings.
- Our findings can assist clinicians in decision-making by addressing concerns related to treatment burden and HRQoL to use ET combined with CDK 4/6i.

### Conclusion

- The results indicate no significant overall differences, suggesting that adding CDK4/6i to ET does not meaningfully impact HRQoL and supports its use without major HRQoL concerns in older women with advanced breast cancer.
- A comprehensive approach addressing both cancer treatment and comorbid conditions is essential for optimizing patient well-being.

## REFERENCES

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