

# Supplementary Materials

## *Quality of life scores by socio-demographic and clinical characteristics of the participants*

### **Abbreviations:**

SD, standard deviation;

GHS, global health status; PF, physical functioning; RF, role functioning; EF, emotional functioning; CF, cognitive functioning;

SF, social functioning; FA, fatigue; NV, nausea and vomiting; DI, diarrhoea; FI, financial difficulties; PA, pain; DY, dyspnoea;

SL, insomnia; AP, appetite loss; CO, constipation; BRBI, body image; BRSEF, sexual functioning; BRFU, future perspective;

BRSEE, sexual enjoyment; BRST, systemic therapy side effect; BRBS, breast symptoms; BRAS, arm symptoms; BRHL, upset by hair loss.

**Table S1 Quality of life scores (Mean ± SD) by Age, Residence (house locality), Marital status**

EORTC Items	Age			P	Residence (house locality)		P	Marital status			P
	≤45	45-54	≥55		Urban	Rural		Married	Divorced/ Widow	Single	
<b>Panel A - QLQ-C30 Questionnaire</b>											
GHS	58.0±14.5	53.5±14.0	48.5±14.1	<0.001*	53.8±14.3	53.8±15.1	0.782	52.9±14.7	58.3±11.2	65.7±13.5	<0.001*
<b>Functional scales</b>											
PF	75.0±15.6	74.5±17.9	77.4±18.3	0.052	77.4±16.4	73.5±17.8	0.002*	76.5±17.3	64.9±15.6	72.1±12.9	<0.001*
RF	78.4±24.4	75.6±26.1	78.3±26.2	0.383	79.2±25.0	75.5±26.0	0.053	78.3±25.9	64.7±18.8	77.8±21.7	<0.001*
EF	75.0±18.4	73.0±20.2	74.9±20.7	0.444	76.3±19.1	72.1±20.1	0.014*	75.6±19.7	60.7±18.5	68.8±13.2	<0.001*
CF	77.9±18.1	75.1±19.2	77.9±21.5	0.096	79.0±18.9	74.7±19.8	0.004*	77.9±19.4	62.3±18.0	79.6±12.5	<0.001*
SF	71.1±22.9	70.3±24.4	67.8±27.1	0.067	72.9±23.5	66.8±25.3	0.003*	70.6±24.8	57.1±19.9	74.7±22.8	<0.001*
<b>Symptom scales</b>											
FA	33.4±16.5	35.6±18.4	32.6±19.5	0.166	33.4±18.1	34.63±18.0	0.340	33.2±18.2	42.3±16.9	36.2±12.9	<0.001*
NV	19.2±21.4	20.6±21.2	16.6±21.8	0.065	16.9±20.7	21.13±22.1	0.014*	17.3±20.6	41.3±22.2	18.5±18.1	<0.001*
DI	11.5±18.3	11.9±20.6	6.9±16.7	0.007*	9.1±18.5	11.82±19.2	0.028*	8.6±17.3	31.7±25.4	13.6±16.7	<0.001*
FI	33.5±27.9	34.2±28.7	36.8±29.7	0.529	31.3±28.0	38.13±28.9	0.002*	33.9±28.4	45.2±29.3	32.1±31.3	0.038*
PA	25.5±18.9	31.3±18.6	30.0±22.1	0.005*	27.2±20.3	30.60±19.2	0.009*	28.5±20.2	35.7±16.7	24.7±15.6	0.006*

DY	18.9±22.3	18.6±24.0	13.0±19.0	0.024*	15.6±21.7	18.84±22.6	0.052	15.5±21.1	37.3±26.7	21.0±21.0	<0.001*
SL	32.0±24.7	33.3±25.6	28.0±21.8	0.158	32.4±25.4	30.43±23.3	0.476	31.3±24.5	39.7±22.4	21.0±21.0	0.006*
AP	24.1±26.1	26.2±26.2	21.1±22.8	0.221	22.4±25.5	25.75±25.1	0.056	22.9±25.0	43.6±24.9	16.0±19.3	<0.001*
CO	24.7±26.1	26.5±26.6	21.9±26.2	0.185	23.4±25.8	25.86±26.9	0.271	23.4±25.7	45.2±30.2	17.3±19.3	<0.001*
<b>Panel B - QLQ-BR23 Questionnaire</b>											
<b>Functional scales</b>											
BRBI	66.4±23.1	65.8±21.5	61.8±31.0	0.917	65.8±25.5	64.0±24.4	0.223	65.5±25.7	55.4±18.9	67.6±13.5	0.001*
BRSEF	85.0±17.0	89.2±16.2	94.1±12.2	<0.001*	88.5±16.3	89.5±15.5	0.482	90.2±15.2	74.4±17.5	86.4±16.0	<0.001*
BRFU	51.5±30.1	53.1±29.9	49.2±34.9	0.546	54.1±30.9	48.7±31.7	0.039*	51.8±31.7	46.0±32.9	54.3±21.0	0.503
BRSEE	84.5±22.0	87.7±20.3	94.4±12.5	<0.001*	87.8±20.7	88.8±18.4	0.808	89.9±18.1	66.7±26.1	88.9±18.5	<0.001*
<b>Symptom scales</b>											
BRST	24.8±16.9	24.4±16.7	25.0±17.2	0.932	22.7±17.5	26.7±16.0	<0.001*	23.9±16.8	36.3±13.3	22.2±15.7	<0.001*
BRBS	17.6±19.1	17.8±20.5	15.4±19.8	0.359	15.2±19.1	19.1±20.3	0.015*	15.5±19.5	34.9±18.0	20.7±15.6	<0.001*
BRAS	18.3±18.0	21.7±19.9	20.8±21.2	0.258	18.4±18.9	22.1±20.3	0.016*	19.5±19.8	33.1±15.6	15.2±13.5	<0.001*
BRHL	33.8±27.9	37.9±30.0	45.7±32.4	0.002*	35.9±30.1	41.2±30.2	0.025*	38.3±31.0	44.7±25.4	34.6±21.6	0.175*

**Table S2 Quality of life scores (Mean ± SD) by Educational level, Medical security**

EORTC Items	Educational level				P	Medical security				P
	Illiteracy or primary school	Secondary school	High school/ Technical secondary school	University degree and above		New rural cooperative medical system(NCMS)	Urban workers insurance	Urban residents insurance	others	
<b>Panel A - QLQ-C30 Questionnaire</b>										
GHS	50.4±12.0	52.3±14.4	52.3±15.4	61.0±15.2	<0.001*	53.7±15.1	52.8±13.7	60.9±12.9	57.0±20.1	0.001*
<b>Functional scales</b>										
PF	78.0±15.6	75.2±18.4	75.9±18.4	72.0±16.8	0.001*	74.7±16.6	77.6±17.0	71.5±14.9	65.1±23.7	<0.001*
RF	79.5±24.5	78.0±25.7	77.5±26.1	73.8±26.2	0.158	77.5±25.5	78.5±25.5	71.3±23.3	70.5±28.8	0.137
EF	76.8±19.6	74.1±19.1	74.8±21.0	70.4±18.8	0.013*	72.9±20.1	76.4±19.2	72.7±18.8	65.1±19.9	0.012*
CF	78.5±19.4	76.7±18.0	78.2±20.9	73.7±19.4	0.047*	75.8±19.6	79.4±18.9	70.8±16.9	67.3±22.8	0.001*
SF	67.8±25.8	68.5±23.3	72.7±25.2	71.4±23.3	0.247	68.2±25.6	72.7±24.0	62.5±19.4	65.4±23.1	0.028*
<b>Symptom scales</b>										
FA	31.7±17.3	34.5±19.5	35.2±18.0	35.6±17.8	0.026*	34.4±17.6	33.2±17.5	35.1±21.5	37.6±24.1	0.464
NV	15.6±18.5	19.8±22.4	20.4±23.5	21.7±22.1	0.088	19.1±21.8	17.3±20.2	22.9±24.6	32.0±24.0	0.010*
DI	6.3±13.1	11.7±22.0	9.7±18.2	15.4±21.8	<0.001*	10.1±18.4	8.0±16.5	22.9±24.3	24.4±24.1	<0.001*

FI	38.2±28.6	35.4±27.3	32.1±30.0	31.5±28.4	0.063	36.6±29.2	31.2±26.9	44.8±33.4	39.7±31.3	0.038*
PA	28.2±19.6	27.7±20.4	29.5±19.7	30.2±19.9	0.675	29.5±19.1	27.3±19.8	29.7±20.2	37.8±25.6	0.083
DY	11.5±16.9	18.0±24.5	18.3±24.2	23.3±23.1	<0.001*	18.0±22.1	14.7±21.5	26.0±26.4	25.6±21.7	0.003*
SL	29.0±22.5	34.6±23.4	31.3±25.1	32.0±26.8	0.256	29.1±23.6	32.3±24.7	35.4±26.7	39.7±25.0	0.108
AP	20.3±22.6	24.0±24.7	27.2±27.7	26.4±26.6	0.117	24.1±25.3	22.9±23.8	27.1±31.0	33.3±32.7	0.520
CO	23.5±25.2	25.8±27.8	22.6±25.9	26.8±27.0	0.541	23.6±26.4	23.7±25.2	32.3±32.2	35.9±28.2	0.071

**Panel B - QLQ-BR23 Questionnaire**

**Functional scales**

BRBI	67.6±26.9	66.4±23.2	63.2±27.2	61.5±21.1	0.006*	64.83±24.26	65.30±26.23	63.80±22.06	62.82±22.64	0.741
BRSEF	93.5±13.2	89.1±16.2	88.7±14.6	83.1±18.3	<0.001*	90.65±14.53	89.86±15.49	76.34±21.85	77.56±15.59	<0.001*
BRFU	50.0±33.6	51.6±30.4	50.6±32.9	54.1±27.8	0.729	49.94±31.62	52.84±31.51	53.12±30.36	50.00±30.18	0.779
BRSEE	94.1±13.6	89.0±17.4	88.5±18.4	79.7±25.4	<0.001*	89.70±17.77	89.63±19.31	76.34±26.10	74.36±21.72	<0.001*

**Symptom scales**

BRST	23.9±15.3	24.0±15.2	24.5±18.1	26.6±19.0	0.701	25.33±16.25	23.24±17.27	26.04±15.25	33.15±18.14	0.014*
BRBS	12.0±17.3	17.6±20.7	16.1±18.6	24.4±21.2	<0.001*	17.55±19.68	15.10±19.56	23.44±18.86	27.24±21.15	<0.001*
BRAS	17.8±20.1	20.5±20.6	20.4±18.0	23.2±19.3	0.017*	20.87±19.73	18.23±18.95	27.43±20.54	26.92±22.26	0.013*
BRHL	40.2±31.5	37.4±29.3	39.6±32.6	36.4±27.2	0.850	40.74±30.04	36.61±30.69	31.18±29.73	46.15±26.79	0.048*

**Table S3 Quality of life scores(Mean ± SD) by Annual household income, Disease duration**

EORTC Items	Annual household income (CYN)				P	Disease duration, months				P
	< 30000	30000-80000	80000-150000	>150000		≤12	13-36	37-60	≥61	
<b>Panel A - QLQ-C30 Questionnaire</b>										
GHS	49.2±16.2	52.3±13.0	59.3±13.7	62.8±12.0	<0.001*	55.7±13.8	53.4±15.6	50.4±12.8	54.7±15.6	0.007*
<b>Functional scales</b>										
PF	74.6±20.5	78.8±14.5	72.6±16.7	66.2±16.9	<0.001*	74.4±17.0	77.6±16.2	77.9±16.1	71.0±19.6	0.009*
RF	73.7±28.3	81.4±23.9	75.5±26.1	71.9±15.5	0.002*	76.6±24.1	79.8±25.8	77.4±24.4	74.3±28.5	0.237
EF	75.6±20.2	76.4±19.2	70.5±19.6	67.2±18.6	0.001*	72.4±18.3	75.7±20.8	77.5±20.5	71.5±18.7	0.003*
CF	77.0±22.0	79.3±18.2	74.3±18.9	68.7±16.3	0.001*	76.4±17.9	78.8±19.2	78.9±20.4	72.3±21.1	0.013*
SF	65.1±27.6	72.0±24.2	72.7±22.8	63.5±14.9	0.025*	69.7±23.0	70.6±26.0	73.4±23.3	65.3±25.7	0.068
<b>Symptom scales</b>										
FA	35.7±21.5	31.7±17.0	35.7±15.3	36.1±18.5	0.004*	34.3±16.2	32.2±19.2	32.3±18.3	38.5±18.2	0.004*
NV	18.8±22.4	16.2±19.8	22.3±22.6	26.6±21.5	0.006*	21.9±20.7	16.4±21.5	14.1±17.5	23.5±24.9	0.001*
DI	6.2±13.5	8.3±17.1	15.7±23.0	24.0±22.8	<0.001*	13.2±19.9	8.6±17.5	4.8±12.5	14.7±22.9	<0.001*
FI	42.2±30.7	32.2±27.6	30.3±27.7	37.5±25.0	0.001*	33.7±28.5	35.0±28.5	30.1±26.8	40.4±30.4	0.067
PA	29.9±21.5	27.3±19.8	29.7±18.5	31.8±17.6	0.269	28.5±18.3	27.4±20.6	27.8±20.2	33.2±20.5	0.073

DY	14.7±20.0	14.1±20.8	23.7±26.1	24.0±15.2	<0.001*	18.6±21.0	13.4±21.5	16.1±21.4	22.9±25.1	0.001*
SL	29.6±24.7	30.1±23.2	34.6±25.6	35.4±25.3	0.180	35.1±23.9	26.1±23.3	32.4±27.0	33.6±22.9	0.001*
AP	21.3±25.4	22.5±23.8	28.3±27.2	30.2±24.5	0.024*	27.9±26.3	19.5±24.0	21.1±24.1	28.7±25.4	0.001*
CO	22.4±26.0	21.7±24.4	29.4±27.8	36.5±30.9	0.003*	28.2±26.8	23.2±24.9	20.5±25.8	25.1±28.0	0.056

**Panel B - QLQ-BR23 Questionnaire**

**Functional scales**

BRBI	61.8±29.0	68.3±24.7	64.0±21.2	57.3±18.3	0.001*	63.0±24.2	67.4±25.4	67.0±25.9	61.5±24.2	0.004*
BRSEF	93.5±12.6	91.3±14.6	84.6±17.4	68.7±13.9	<0.001*	85.4±17.6	92.0±14.4	92.0±13.6	86.7±16.3	<0.001*
BRFU	45.7±34.9	53.0±31.6	55.1±26.6	50.0±29.3	0.094	50.3±29.6	55.2±31.8	50.0±32.9	48.3±31.9	0.235
BRSEE	93.4±13.8	92.1±15.7	82.3±23.0	61.5±25.5	<0.001*	83.8±22.8	91.2±16.9	92.3±15.5	86.7±20.3	0.001*

**Symptom scales**

BRST	26.8±17.4	22.4±15.2	24.6±18.4	33.5±15.7	0.001*	26.2±16.8	21.9±16.5	24.5±16.8	27.4±17.1	0.013*
BRBS	17.4±20.2	11.9±16.3	23.0±21.9	30.2±20.5	<0.001*	20.4±20.3	13.8±17.7	13.1±19.2	21.5±21.6	<0.001*
BRAS	23.7±22.3	16.0±17.3	22.4±19.3	26.7±19.1	<0.001*	20.5±18.4	18.3±19.8	19.5±20.2	23.9±20.5	0.064
BRHL	42.9±34.5	37.1±30.7	36.9±25.0	36.6±26.3	0.459	39.6±29.4	37.1±30.7	36.8±30.7	41.3±30.8	0.444

**Table S4 Quality of life scores (Mean ± SD) by Metastatic breast cancer state (State M), Menopausal status**

EORTC Items	Metastatic breast cancer state (State M)		P	Menopausal status		P
	No	Yes		Post-menopausal	Pre-menopausal	
<b>Panel A - QLQ-C30 Questionnaire</b>						
GHS	55.0±14.7	49.9±13.9	0.001*	51.0±15.6	57.3±12.6	<0.001*
<b>Functional scales</b>						
PF	75.8±16.4	74.5±19.9	0.958	75.7±18.6	75.2±15.4	<0.001*
RF	78.8±24.6	72.6±28.1	0.021*	76.0±26.9	78.9±23.7	0.001*
EF	74.6±19.1	73.2±21.7	0.703	73.3±20.8	75.4±18.3	0.052
CF	77.8±18.3	74.0±22.9	0.186	75.8±20.8	78.2±17.7	0.012*
SF	71.5±24.1	64.5±25.6	0.006*	69.3±26.1	70.7±22.7	0.118
<b>Symptom scales</b>						
FA	33.3±17.2	36.4±20.6	0.260	35.2±19.9	32.6±15.4	0.016*
NV	18.6±20.8	20.2±23.5	0.794	18.3±21.2	19.9±21.8	<0.001*
DI	10.5±19.0	10.2±18.7	0.920	8.6±18.1	12.6±19.6	0.001*
FI	33.1±28.8	39.7±27.9	0.006*	36.4±29.7	32.5±27.3	0.545



PA	28.0±19.2	31.7±21.7	0.108	31.1±20.9	26.1±18.1	0.001*
DY	16.6±21.5	19.1±24.3	0.357	16.7±22.6	17.9±21.7	<0.001*
SL	30.7±24.0	33.8±25.5	0.231	31.0±24.5	31.9±24.3	0.225
AP	23.0±24.4	27.7±27.9	0.111	23.6±25.2	24.6±25.4	0.038*
CO	24.5±25.9	25.1±27.9	0.964	24.4±27.0	24.8±25.5	0.136

**Panel B - QLQ-BR23 Questionnaire**

**Functional scales**

BRBI	65.3±23.9	63.8±28.2	0.996	62.7±26.7	67.6±22.5	0.090
BRSEF	88.5±16.4	90.4±14.1	0.379	92.1±14.1	85.2±17.2	<0.001*
BRFU	53.0±30.7	46.3±33.3	0.040*	49.6±32.5	53.8±29.8	0.902
BRSEE	88.1±19.80	89.1±18.9	0.627	91.0±18.3	85.1±20.6	<0.001*

**Symptom scales**

BRST	23.9±16.5	27.5±17.7	0.034*	25.3±17.4	24.0±16.2	0.023*
BRBS	16.5±19.0	19.1±22.3	0.414	16.9±20.4	17.4±19.1	<0.001*
BRAS	18.9±18.7	24.6±21.9	0.017*	21.5±20.6	18.7±18.3	0.001*
BRHL	36.8±29.4	44.4±32.5	0.023*	42.6±31.6	33.6±27.9	0.450

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