

# Patient preferences for palliative treatment of locally advanced or metastatic Breast Cancer: an adaptive choice-based conjoint analysis study from Germany

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## BACKGROUND

- Patients suffering from different types of metastatic or advanced cancer will likely have cancer-specific attitudes, needs and expectations regarding their treatment.
- Patient preferences should therefore be taken into consideration in the context of the regulatory approval process.

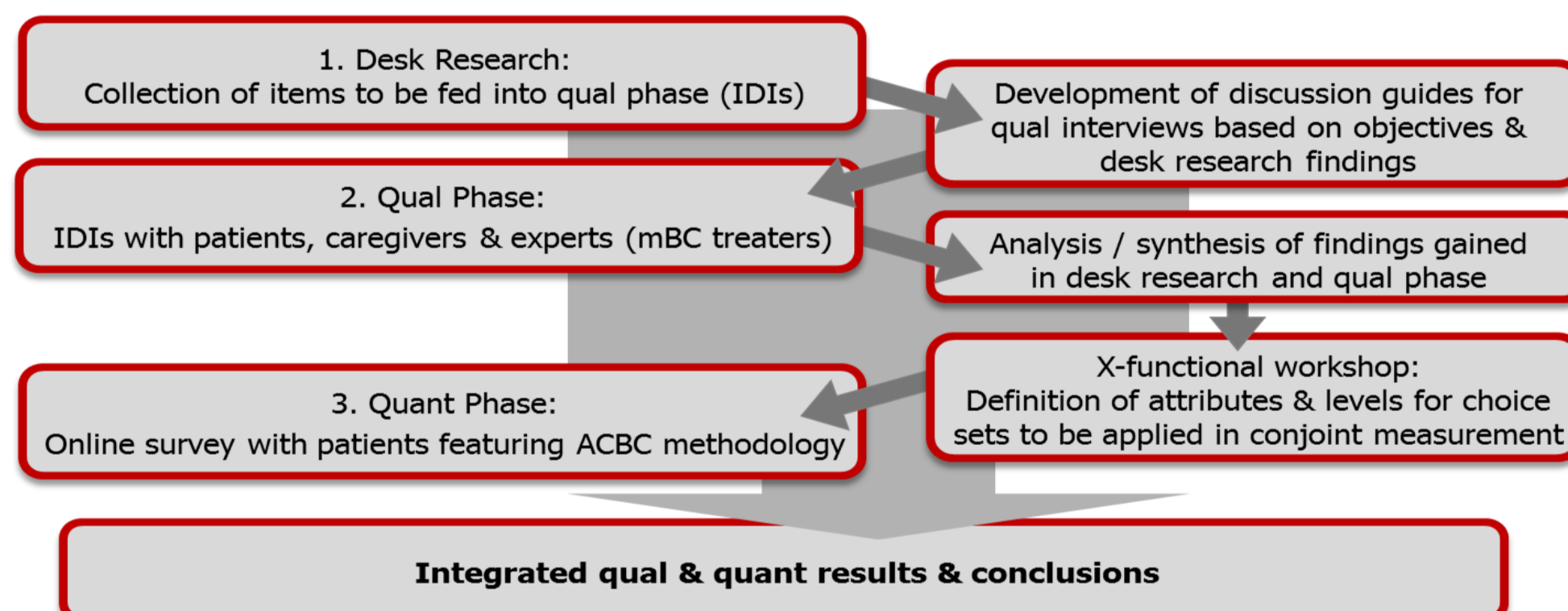
## OBJECTIVES

- Overall:
  - identify the preferences of patients with metastatic Breast Cancer (mBC) related to potential characteristics of cancer treatments.
- Specifically:
  - reveal the relative importance of gained lifetime (OS) and gained time to progression (PFS) in relation to quality of life and side effects associated with cancer therapies.

## METHODS

- The project was based on a multimodal research approach encompassing three modules:
  - Desk research
  - Qualitative depth interviews
  - Quantitative online survey

Figure 1: Study Design



### Desk Research

- Secondary data analyses were conducted to collect attributes and levels that appeared to be at least somewhat relevant for mBC patients in the context of cancer therapy evaluation and decision.

- A comprehensive list of characteristics emerged which was used as input for the consecutive qualitative module.

### Qualitative Research

- In-depth interviews with mBC patients, care givers and treaters were carried out to further explore how mBC and its treatment is perceived and which factors and dimensions play a critical role when it comes to therapy assessment and decision. Please see table 1 for methodological details and table 2 for inclusion criteria of respondents.

Table 1: Methodology

	Qual Interviews	Quant Interviews
Sample Size	TOTAL: n=17 n=12 mBC patients (8 x 1 <sup>st</sup> Line + 4 x 2 <sup>nd</sup> Line) n=3 care givers of mBC pts n=2 physicians treating mBC pts	n=104 mBC patients (67 x 1 <sup>st</sup> Line + 37 x 2 <sup>nd</sup> Line)
Data Collection Technique	In-depth interviews (face-to-face / telephone)	Online Survey
Length of Interview	approx. 60 minutes	approx. 30 minutes
Field Period	12.07.2017 – 20.07.2017	14.11.2017 – 28.02.2018
Region	Germany	

## METHODS (cont'd)

Table 2: Inclusion Criteria

Criteria patients had to meet to be eligible to participate in this research:
female post-menopausal patients (49 years +)
suffering from Stage IV HR+ / HER2- breast cancer (either de novo or relapsed)
receiving active systemic treatment (either 1st Line or 2nd Line)

### Development of Conjoint Matrix

- Based on desk research and qualitative interviews, three dimensions emerged:
  - Therapy goals
  - Quality of life
  - Side effects

In order to achieve statistical significance and not to overburden the respondents, the initial list of items for side effects had to be reduced to a maximum number of six. Considerations about inclusion or exclusion were cross-functionally discussed, taking the additional findings from the qual research into account. The resulting judgements are shown in table 3.

Table 3: Selection of side effect items

Identified items for side effects	
included	not included
Diarrhea	Poor blood values
Nausea / Vomiting	Bone / joint pain
Hair Loss	Sensoric neuropathy
Fatigue	Hot flushes
Dry mucosa	Appetite loss
Risk of infection	Obstipation
	Pain

- Based on the selected elements and three levels each, a draft conjoint matrix was elaborated, which was validated and further refined by means of two pre-tests with mBC patients (n=9).
- The final conjoint matrix (see figure 2) consisted of
  - 2 attributes related to therapy goals (OS and PFS),
  - 4 attributes characterizing different dimensions of health-related Quality of Life (QoL) and
  - 6 attributes describing side effects.

Figure 2: Conjoint Matrix

Dimension	Attribute	Level 1	Level 2	Level 3
Therapy goals	Gained life time (OS)	+ 6 months gained life time	+3 months gained life time	no gain
	Gained time without disease progression (PFS)	+ 12 months without disease progression	+ 6 month without disease progression	no gain
Quality of life	Emotional balance	hardly restricted	somewhat restricted	considerably restricted
	Participation in social life (e.g. friends, work, leisure time activities)	hardly restricted	somewhat restricted	considerably restricted
	Physical agility & mobility	hardly restricted	somewhat restricted	considerably restricted
	Flexibility throughout the day / week	hardly restricted	somewhat restricted	considerably restricted
Side effects	Diarrhea	mild	moderate	severe
	Nausea & vomiting	mild	moderate	severe
	Hair loss	mild	moderate	severe
	Fatigue	mild	moderate	severe
	Dry mucosa	mild	moderate	severe
	Risk of infection	mild	moderate	severe

### Quantitative Research

- The conjoint matrix represented the basis of the subsequent quantitative survey using the adaptive choice based conjoint methodology (ACBC)<sup>1,2</sup> which was implemented as the core part of an online questionnaire.
- A total sample of n = 104 mBC patients (inclusion criteria see table 2), classified into two groups (patients currently receiving 1<sup>st</sup> line therapy (n = 67) / 2<sup>nd</sup> line therapy (n = 37)), participated in the quantitative survey.

## RESULTS

- The final sample consists of 104 patients of whom 32 patients were newly diagnosed and 72 patients were relapsed. Mean age was 61 years.
- QoL characterized as 'physical mobility and flexibility', received the highest value overall (19.4%), followed by treatment goals (OS: 15.2% and PFS: 14.4%; with no statistical significant difference between OS and PFS).
- Side effects related to the therapy were considered less important. Specifically, 'nausea & vomiting' (9.3%) represented the most relevant factor amongst the side effects, followed by infection risk (6.4%), whereas diarrhea (2.9%) and mucosal dryness (1.2%) turned out to be the least important side effects of the attributes considered in the matrix.
- No significant differences were detected between 1st line vs. 2nd line patients except for hair loss (higher relevance amongst 1st line patients).

Figure 3: Overview of ACBC Results

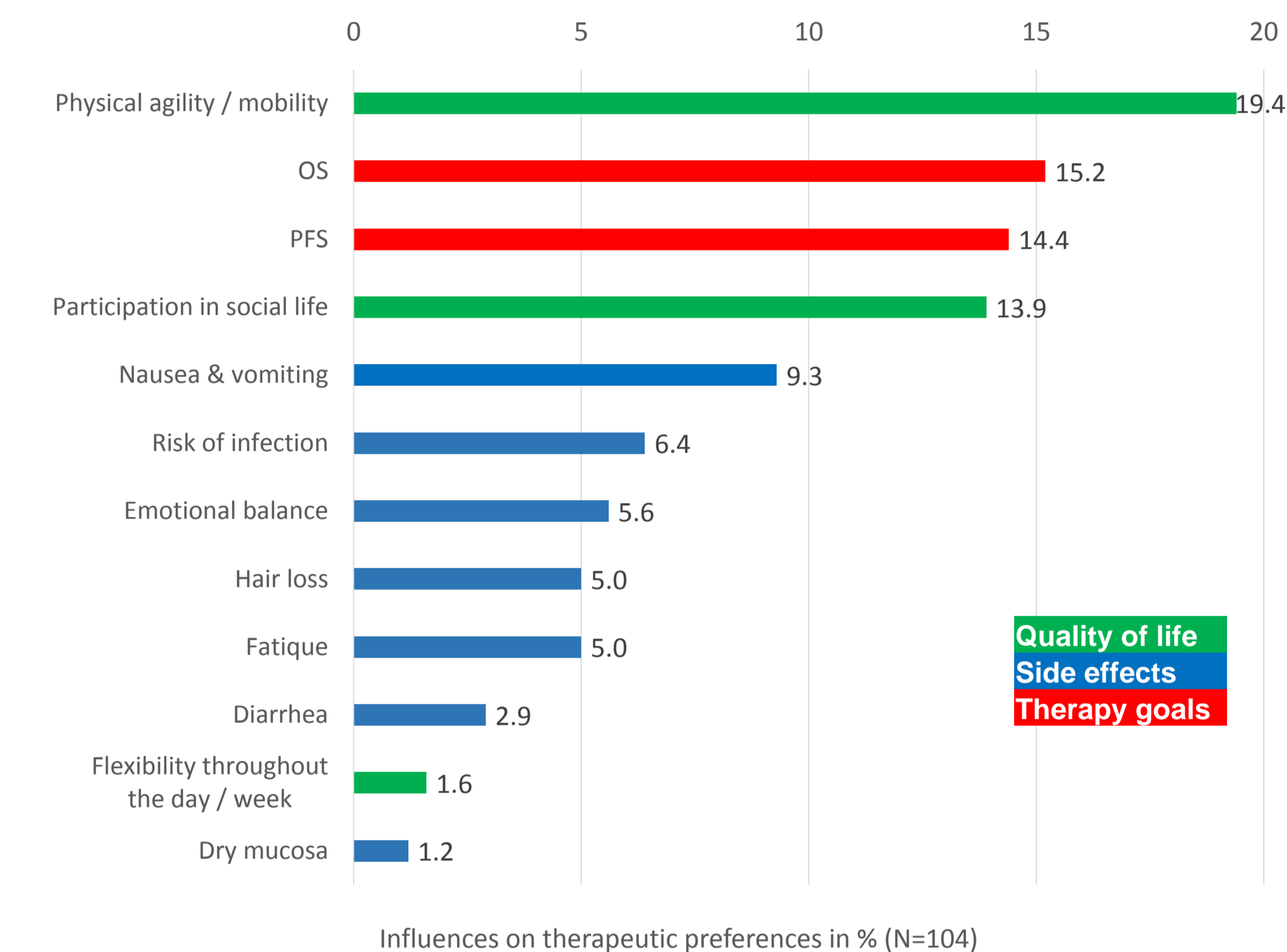


Table 4: Relative Utility Scores of Attributes

Attribute	Relative Utility Scores (standardized in %)		
	TOTAL (N=104)	1st line pts. (N=67)	2nd line pts. (N=37)
Physical agility / mobility	19.4	19.8	18.7
OS	15.2	14.9	15.8
PFS	14.4	13.7	15.5
Participation in social life	13.9	14.0	13.9
Nausea & vomiting	9.3	9.1	9.6
Risk of infection	6.4	5.9	7.3
Emotional balance	5.6	6.3	4.3
Hair loss	5.0	5.8	3.5
Fatigue	5.0	4.7	5.7
Diarrhea	2.9	3.1	2.7
Flexibility throughout the day / week	1.6	1.7	1.6
Dry mucosa	1.2	1.0	1.6

### Model fit

- McFadden pseudo R<sup>2</sup> (0.805), Root-Likelihood (0.864) and Chi-square test (2809.041, which is a highly significant result (p<0.0001)) demonstrated an excellent statistical quality of this study.

## CONCLUSION

- The study shows that in the context of a mBC treatment decision, the preferences of patients with mBC, independent of their treatment experience so far, are primarily focused on higher or stable QoL and therapy goals such as OS and PFS.
- Patients seem to tolerate side effects to a certain extent, as long as QoL and OS / PFS goals are achieved.

### References

- Sawtooth-Software – Technical Papers. <https://www.sawtoothsoftware.com/support/technical-papers>
- Sawtooth-Software – Technical Papers (2000-2009). The CBC/HB System for Hierarchical Bayes Estimation Version 5.0 Technical Paper. <http://www.sawtoothsoftware.com/download/techpap/hbtech.pdf>

### Conflicts of interest

Elke Weidling is working as contractor on behalf of Lilly Deutschland GmbH  
Thorsten Otto is employee of Lilly Deutschland GmbH