Preference Elicitation for Cancer Treatment in Europe:
A Systematic Literature Review of Discrete Choice Experiments

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BACKGROUND

- Cancer is one of the leading causes of death in Europe, accounting for 20% of all deaths.[1]
- Although mortality due to oncological indications has decreased,[2] the incidence of cancer increased, which might be caused by an aging European population.[1,3]
- Thus, the amount spent on cancer drugs is constantly rising and the efficient allocation of resources is a key challenge for policy makers.[4,5]
- Patients suffering from cancer have to deal with various treatment-related decisions based on their personal preferences, such as treatment options, products, and services. Insights on therapy preferences could make healthcare provision more effective and in-line with the individual patient need.[6]
- In recent years, several studies have been conducted to gather information on preferences in cancer treatment. Different aspects such as drug or surgical treatment, treatment of refractory cancer, or general treatment patterns were considered in those studies.
- Especially Discrete Choice Experiments (DCE) are of growing importance in the field of preference measurement.

OBJECTIVE

- This study aimed at aggregating which aspects of cancer treatment were included in DCEs and which were most important for patients, physicians, and other healthcare professionals, as well as for the general population.

METHODS

- A systematic literature search (up to April 2019) was conducted in MEDLINE and EMBASE to identify DCEs investigating preferences in cancer treatment.
- The following search terms were used for identifying DCEs in oncological indications: discrete choice model* OR discrete choice experiment* OR choice-based conjoint OR conjoint analysis OR stated preference* AND neoplasm* OR oncology OR cancer* OR malignant* OR carcinoma.
- Specific inclusion criteria were: DCE as elicitation method, focus on cancer treatment, study conducted in Europe, and journal articles published in English.
- Studies were excluded if they focused on cancer screening, on pre-cancerous indications, or on comorbidities of cancer.
- The identified studies were analyzed in terms of year of publication, study country, study participants, specific indication, and relative importance of attributes.
- Attributes included in the DCEs were classified into the following categories: "outcome," "costs," "organization," "patient-/disease-specific characteristics," as well as "procedure."

RESULTS

- The systematic search yielded 623 hits (n=302 through MEDLINE and n=321 through EMBASE).
- After removal of 277 duplicates, 346 references were included in the subsequent screening of study titles, abstracts, and full texts by two independent researchers. Finally, 26 studies were included for further analysis.
- Since 2004 (the year of the first identified publication), the number of DCEs measuring preferences on cancer treatment slightly increased (see Figure 1).
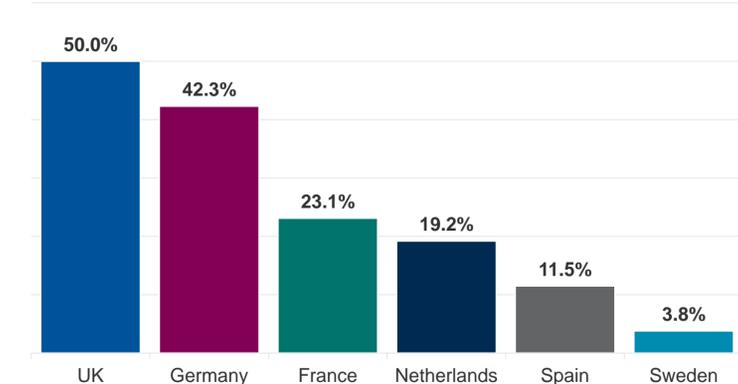
Figure 1: Year of Publication of the DCEs
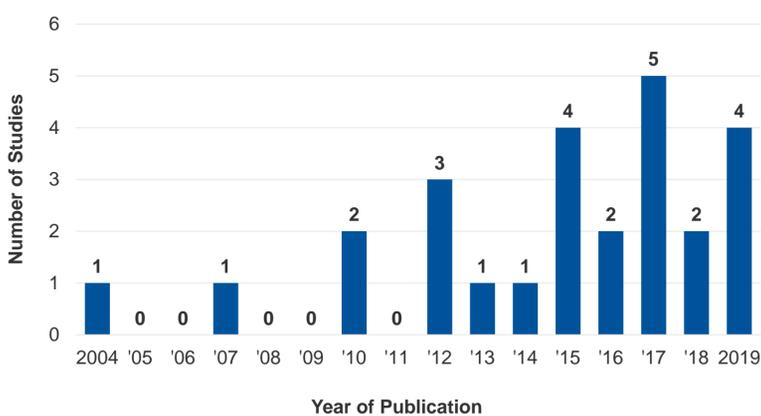
Note: For the year 2019, only studies that were published until April were considered.

- Seven studies were multi-country studies. Most of the DCEs were conducted in the UK (n=13), Germany (n=11), and France (n=6) (see Figure 2).

Figure 2: Country Distribution

Note: As some of the studies were conducted in multiple countries, percentages add up to more than 100%.

- In about two-thirds (n=19) of the identified DCEs, patients were the study subject. Other DCEs were conducted by interviewing physicians (n=6), the general population (n=2), or other healthcare professionals (n=2).
- Preferences were assessed most frequently for lung cancer, prostate cancer, basal cell carcinoma (n=4; 13.3% each) followed by bone metastases and studies without a specific cancer type (n=3; 10.0% each) (see Figure 3).

RESULTS (CONT.)

Figure 3: Type of Cancer and Corresponding ICD-10-GM Code
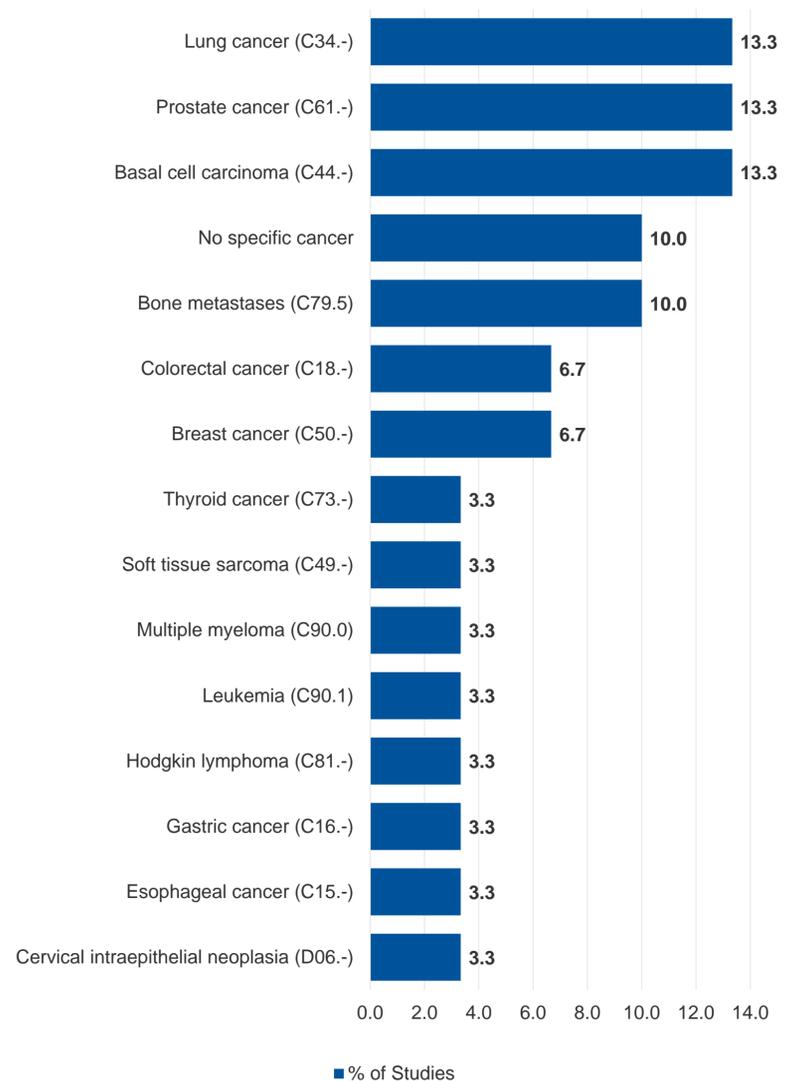
- A total of 144 attributes were identified in the DCEs, which corresponds to a mean number of 5.3 attributes per study.
- The classification of attributes into categories revealed that components such as costs or patient/disease characteristics were rarely used in DCEs, whereas almost two-thirds of all identified attributes (63.2%) were outcomes-affiliated attributes.

Figure 4: Categories of Attributes Used in DCEs (N=144)
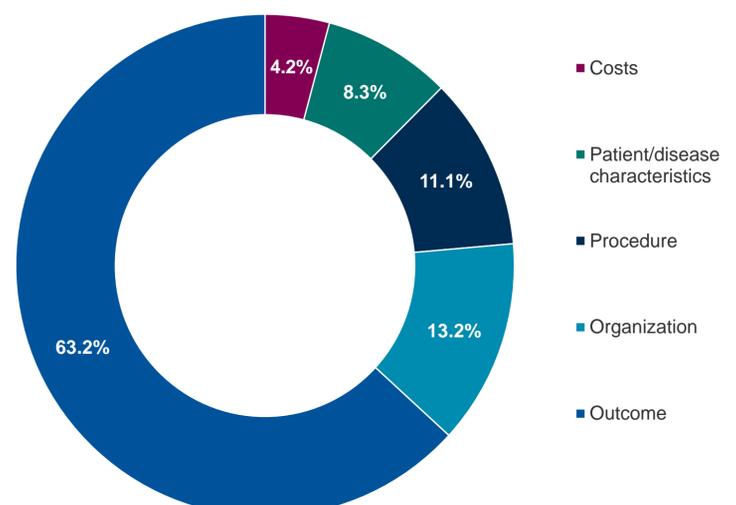
- Outcome attributes, such as progression-free survival or the occurrence of adverse events showed the highest relative importance in most of the studies (n=18), regardless of the study subjects and of the type of cancer.

CONCLUSIONS

- Overall, this systematic literature review of DCEs identified a considerable number of different attributes, which might affect cancer treatment in Europe.
- Although the procedure, the organization, costs, and patient- or disease-specific attributes had a substantial impact on the preferences in cancer treatment for participants in some of the identified studies, treatment outcome attributes were of highest importance when choosing different cancer treatment options.
- Policy makers should be aware that outcomes-affiliated attributes are most important to patients, healthcare professionals, and the population when choosing cancer treatment options.
- Other attributes like organizational or procedural aspects also may have a significant impact on preferences for cancer treatment and should also be taken into account.

References:
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