

Determine patient preferences by means of conjoint analysis

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The Conjoint Analysis (CA) method is in principle suitable to find out which preferences patients have regarding treatment goals. However, to widely use it in health economic evaluations, some (primarily methodological) issues still need to be clarified. This is the result of a pilot project by the German Institute for Quality and Efficiency in Health Care (IQWiG). Following the Analytic Hierarchy Process (AHP), CA is the second method tested by the Institute together with external experts.

Summarize outcome-specific results to an overall value

In its health economic evaluations IQWiG works with a particular method, the efficiency frontier concept. Efficiency frontiers can be drawn either for an aggregated outcome or for a single outcome criterion such as mortality (death rate), morbidity (symptoms and complaints) or quality of life. However, often data are only available for single outcome criteria. To summarize efficiency frontiers for different patient-relevant outcomes to an overall evaluation, that is, to aggregate them, the individual results must be weighted. Patient preferences, for example, can be used for this purpose.

Involvement of patients has so far been insufficient

In two pilot projects IQWiG has therefore tested the two most widely

distributed methods used internationally to determine patient preferences. IQWiG already presented the working paper on AHP in June 2013; the working paper on CA is now also available.

Patients are in a way the "end-consumers" of medical interventions. In many countries they are therefore involved in the assessments of benefits and costs. However, so far this has not happened in a systematic, transparent and reproducible way. In addition, purely qualitative approaches are generally used, but not quantitative ones such as CA or AHP.

Both patients and physicians questioned

Using a choice-based variation of CA (discrete choice experiment) the researchers questioned both patients with chronic hepatitis C (HCV) and healthcare professionals involved in their care – first in separate focus groups and then by means of questionnaires. A total of 326 patients and 21 physicians participated.

The questions referred to different dimensions of benefits and harms: effectiveness (e.g. absence of the virus, also called "sustained virological response"), avoidance of side effects (e.g. gastro-intestinal complaints), as well as effort involved (e.g. frequency of injections), and duration of [treatment](#).

Respondents were to choose between "scenarios"

The participants were to choose 18 times between two fictitious treatment alternatives that were composed of various treatment characteristics (attributes) and that differed according to the levels of the characteristics.

The levels of a total of seven attributes were varied multiple times and repeatedly recombined: In such a scenario, Treatment A lasted 48 weeks and Treatment B lasted 24 weeks; the probability of gastro-intestinal complaints was 35% (A) and 25% (B). In the next scenario, with 12 weeks, Treatment A only lasted half as long as Treatment B (24 weeks); the risk of gastro-intestinal side effects was clearly lower for A than for B (25% versus 45%).

Patient preferences versus opinions of healthcare professionals

If the results of all of these choices are analysed using logistic regression models, it is possible to derive the relative importance (weighting) of the individual treatment attributes. For example, it can be calculated how much higher the chance of cure (absence of the virus) must be so that patients accept a certain higher risk of more frequent or more severe side effects.

A comparison of the analysis of patients and physicians shows that the sequence of treatment goals is largely congruent. However, differences exist in the strength of weighting: In both groups "sustained absence of the virus" is ranked in first place; however, if they are to choose a treatment, this attribute is even more crucial for physicians than for patients.

CA is manageable for patients

After this pilot project, IQWiG assesses the CA – as previously the AHP – to be a basically suitable and manageable method. "Patients can handle the procedure and it delivers useful results. One could thus employ the CA for weighting outcomes", says Andreas Gerber-Grote, Head of IQWiG's Health Economics Department.

Both procedures have strengths and weaknesses

Whereas the CA works with multidimensional scenarios, the AHP in each case involves pairwise comparisons (e.g. duration of treatment versus side effects). "For the CA one could thus say that the procedure is closer to decision-making situations as they occur in the real world. The attributes are always assessed here in a batch", explains Gerber-Grote. "However, the complexity of the decision increases with the number of attributes. If one only considers two attributes at the same time – as in the AHP – this is more transparent for respondents."

Clarify methodological issues before widespread use

According to the Deputy Director of the Institute, Stefan Lange, one should bear in mind that "both pilot projects were successful, but before we can widely use CA or AHP in assessments, a whole range of challenges still exist, primarily of a methodological nature."

He added: "It needs to be clarified beforehand who is to be questioned: patients, physicians or – as in the United Kingdom – a sample of the general population? In any case an agreement is required on how representative the selection of respondents has to be. And one needs to determine which degree of precision is required, i.e., how robust the results have to be. This is because the higher the demands, the more people have to be questioned, and the greater the effort involved. Unlike in clinical studies, no standards exist so far as to how the sample size should be planned."

More information: Executive summary of the working paper :
www.iqwig.de/download/GA10-03_..._onjoint-Analysis.pdf

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