Comparison of Treatment Alternatives in Parkinson’s Disease with Best-Worst Scaling, Time Trade-Off and Visual Analogue Scales

Marieke G.M. Weernink, Karin G.M. Groothuis-Oudshoorn, Maarten J. IJzerman, Janine A. van Til
University Twente, Health Technology & Services Research, MIRA institute for Biomedical Technology and Technical Medicine, Enschede

Background
• The ability to determine the utility of the process of care would benefit estimation of cost-effectiveness.
• Visual Analogue Scales (VAS) and Time Trade Off (TTO) are thought to be insensitive to small differences in process and outcome of care.
• Best-Worst scaling (BWS) was proposed as a sensitive and valid method to generate utilities.

Methods
• Public sample of 596 respondents (online survey)
• Valuation of six treatment profiles in Parkinson’s Disease using TTO and VAS.
• BWS2 and BWS3 choice questions, following a D-efficient design → result in BWS utility weights for same six treatment profiles.

Results
Despite scaling differences, there is no statistical significant difference in BWS, TTO or VAS utility values; each of the mean-utility scores follows a monotonic relationship (table 1) and the correlation across-respondents means was very strong for all methods (VAS-BWS2 .985; VAS-BWS3 0.989; TTO-BWS2 0.987; TTO-BWS3 0.987, BWS2-BWS3 0.989; P<0.000, n=422).

<table>
<thead>
<tr>
<th>Attribute suffer from:</th>
<th>Worst profile</th>
<th>Profile 1</th>
<th>Profile 2</th>
<th>Profile 3</th>
<th>Profile 4</th>
<th>Best profile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tremors</td>
<td>Often</td>
<td>Often</td>
<td>Seldom</td>
<td>Seldom</td>
<td>Sometimes</td>
<td>Seldom</td>
</tr>
<tr>
<td>Posture and balance problems</td>
<td>Often</td>
<td>Seldom</td>
<td>Seldom</td>
<td>Often</td>
<td>Sometimes</td>
<td>Seldom</td>
</tr>
<tr>
<td>Slowness of motion</td>
<td>Often</td>
<td>Seldom</td>
<td>Seldom</td>
<td>Often</td>
<td>Seldom</td>
<td>Seldom</td>
</tr>
<tr>
<td>Dizziness</td>
<td>Often</td>
<td>Seldom</td>
<td>Sometimes</td>
<td>Seldom</td>
<td>Seldom</td>
<td>Seldom</td>
</tr>
<tr>
<td>Drowsiness</td>
<td>Often</td>
<td>Seldom</td>
<td>Seldom</td>
<td>Seldom</td>
<td>Seldom</td>
<td>Seldom</td>
</tr>
<tr>
<td>Dyskinesia</td>
<td>Brain surgery</td>
<td>Tablets</td>
<td>Tablets</td>
<td>Tablets</td>
<td>Tablets</td>
<td>Tablets</td>
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<tr>
<td>Mode of administration</td>
<td></td>
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</tbody>
</table>

Both BWS methods are able to differentiate between all six treatment profiles, VAS and TTO are less sensitive (table 2). All methods use different parts of their own scale to value treatment profiles.

Discussion
• As BWS estimates utilities on a latent scale, a key challenge is the anchoring of values to the health utility scale.
• We propose to anchor indirect elicited BWS utility weights into traditional health state utilities on the QALY scale (0-1) and derive a functional form.

More information:
Marieke Weernink MSc
PhD candidate
W: www.utwente.nl/mb/htsr
E: m.g.m.weernink@utwente.nl