An Analysis of the Plastic Surgery Cost-Utility Literature Using a Novel Scoring Tool

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Objectives

• Review cost-utility methodology literature
• Design methodology scoring tool
• Score plastic surgery cost-utility studies on selected criteria
• Identify criteria with opportunities for improvement
• Facilitate further use of cost-utility
Methods

- Literature searched for cost-utility methodology literature
- Methodology scoring tool created from compilation of guidelines
- Literature searched for English-language plastic surgery utility studies
- Identified articles evaluated using the scoring tool
Results

- 4 categories of criteria identified: utility measurements, cost measurements, sensitivity analyses, and best practices
- 16 criteria selected (1 point each)
- 37 plastic surgery manuscripts scored
- Average article score: 5.5 of 16 points
- Lowest score: 3 points (10 studies)
- Highest score: 10 points (1 study)
## Percent of Studies Meeting Criteria

**Utility Measurements:**

<table>
<thead>
<tr>
<th>Measure</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct utility measures</td>
<td>81%</td>
</tr>
<tr>
<td>Population preferences</td>
<td>81%</td>
</tr>
<tr>
<td>Patient preferences</td>
<td>43%</td>
</tr>
<tr>
<td>Indirect utility measures</td>
<td>38%</td>
</tr>
<tr>
<td>Prospective utility measurement</td>
<td>19%</td>
</tr>
<tr>
<td>Cost Measurements</td>
<td>%</td>
</tr>
<tr>
<td>------------------------------------------------------</td>
<td>----</td>
</tr>
<tr>
<td>Costs calculations</td>
<td>41%</td>
</tr>
<tr>
<td>Inflation adjustment</td>
<td>32%</td>
</tr>
<tr>
<td>Discount rate adjustment</td>
<td>14%</td>
</tr>
<tr>
<td>Societal costs calculations</td>
<td>11%</td>
</tr>
</tbody>
</table>
Percent of Studies Meeting Criteria

**Sensitivity Analyses:**
- QALY sensitivity analysis: 49%
- Cost sensitivity analysis: 30%
- Discount rate sensitivity analysis: 0%
## Percent of Studies Meeting Criteria

### Best Practices:

<table>
<thead>
<tr>
<th>Procedure outcomes modeling</th>
<th>Consistent measurement</th>
<th>Clinical marker states validation</th>
<th>Interviewer use</th>
</tr>
</thead>
<tbody>
<tr>
<td>43%</td>
<td>32%</td>
<td>27%</td>
<td>5%</td>
</tr>
</tbody>
</table>
Distribution of points per study

Number of Studies

Points per Study
Conclusions

• Cost-utility studies are still rare within plastic surgery
• Identified studies provide early perspective of potential uses
• Guidelines are inconsistently applied
• All 4 criteria categories need improvement
Significance

• More awareness is necessary of plastic surgery cost-utility applications
• The scoring tool created can enhance studies’ validity and comparability
• Rigorous studies are necessary to objectively compare alternative treatments and maximize value
References

