RESEARCH LETTER

Patients’ with obstructive sleep apnoea syndrome (OSAS) preferences and demand for treatment: a discrete choice experiment

Rationale Despite its high level of effectiveness, initial acceptance of continuous positive airway pressure (CPAP) and regular use in patients with obstructive sleep apnoea syndrome (OSAS) are still an issue. Alternatively, oral appliances (OAs) can be recommended. To improve patient engagement in their treatment, physicians are advised to take into account patient preferences and to share the therapeutic decision. We aimed to determine patients’ preferences for OSAS treatment-related attributes, and to predict patients’ demand for both CPAP and OAs.

Methods A discrete choice experiment (DCE) was performed in 121 newly diagnosed patients consecutively recruited in a sleep unit. Results Regression parameters were the highest for impact on daily life and effectiveness ahead of side effects. In the French context, the demanding probabilities for CPAP and OAs were 60.2% and 36.2%, respectively. They were sensitive to the variation in the amount of out-of-pocket expenses. Further research is needed to investigate more specifically how negative impact on daily life and €378 (€233) out-of-pocket expense per year (in the French context).

RESULTS All the estimates of the model were significant and of the expected sign. Patients preferred a high rate of effectiveness, non-severe side effects, a short time to wait before treatment to be effective, a low negative impact on daily life and a less expensive treatment. ‘Negative impact on daily life’ was the most influential attribute on the patients’ choices. Its relative impact was twice larger than that of the second most influential attribute, which was the ‘effectiveness’ attribute (table 1).

CONCLUSIONS To our knowledge, this is the first study that used the DCE method to measure patients’ preferences for OSAS treatments. Because it was a single-centre study which took place in one healthcare system in which public insurance covers 65% of treatment cost (ie, in France), we should be cautious with the generalisability of the results. This DCE in OSAS emphasises the importance of communicating with patients before the implementation of treatment, since effectiveness of treatment and impact on daily life constitutes the most important factors of choice ahead of side effects. However, these preferences could be threatened by the high level of out-of-pocket expenses. Further research is needed to investigate more specifically how

<table>
<thead>
<tr>
<th>Attribute</th>
<th>No treatment</th>
<th>Treatment &quot;A&quot;</th>
<th>Treatment &quot;B&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate of effectiveness (i.e. ability of treatment to eliminate snoring and apneas if used as instructed)</td>
<td></td>
<td>40%</td>
<td>100%</td>
</tr>
<tr>
<td>Severity of side effects (a severe side effect was depicted as a side effect that could impose cessation of treatment)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time before improvement in health condition</td>
<td>No improvement of your health state at no cost</td>
<td>4 weeks</td>
<td>Immediately</td>
</tr>
<tr>
<td>Negative impact on daily life (i.e. annoying and cumbersome nature of the equipment used in each treatment)</td>
<td>Low</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>Out-of-pocket expense (i.e. expense per year after reimbursement by social and private insurance)</td>
<td>€100</td>
<td>€300</td>
<td></td>
</tr>
</tbody>
</table>

Which option would you choose?
financial constraint can influence patients’ preferences.

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Contributors All authors have made important contributions in the discussion and drafting of the article.

Competing interests BF is consultant for a French company developing and selling oral appliance devices (Orthosom).

Ethical approval This survey was approved by the ‘Comité de Protection des Personnes Ile de France V’ (number 10815, 7 September 2010).

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REFERENCES

Table 1 Nested logit model estimates and impact analysis (n=2904 observations)

<table>
<thead>
<tr>
<th>Effect</th>
<th>Estimate (SE)</th>
<th>Partial effect*</th>
<th>Relative effect (%)†</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment (A)</td>
<td>0.024 (0.186)</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>(No) treatment</td>
<td>–0.964 (0.483)</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Rate of effectiveness</td>
<td>1.085 (0.280)†</td>
<td>–62.7</td>
<td>25.9</td>
</tr>
<tr>
<td>(ref: 40%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severity of side effects</td>
<td>0.635 (0.202)†</td>
<td>–21.6</td>
<td>8.9</td>
</tr>
<tr>
<td>(ref: severe)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time before improvement</td>
<td>0.412 (0.133)†</td>
<td>–8.9</td>
<td>3.7</td>
</tr>
<tr>
<td>(ref: 4 weeks)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative impact on daily life (ref: high)</td>
<td>1.586 (0.428)†</td>
<td>–141.7</td>
<td>58.6</td>
</tr>
<tr>
<td>Out-of-pocket expense (continuous variable)</td>
<td>–0.004 (0.001)†</td>
<td>–8.9</td>
<td>2.9</td>
</tr>
</tbody>
</table>

1 Log likelihood (LL) of ‘full’ model = –662.3; LL of ‘null’ model = –420.5.
2 Partial effect = LL of the model including only the attribute; LL of the ‘null’ model.
3 Relative effect = 100 × (partial effect/(LL of ‘full’ model; LL of ‘null’ model)).
4 Estimated parameter significantly different from zero for a 5% α-risk.
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