The Health-Related Quality of Life (HRQoL) Associated with Ostomy Appliances and Features
A time trade-off (TT0) internet experiment
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Introduction

- An ‘ostomy’ is a surgically created opening in the body for the discharge of body wastes.
- A ‘stoma’ is the actual end of the small or large intestine (or ureter) that protrudes through the abdominal wall.
- An ‘ostomy appliance’ is a medical prosthesis device that is used for the collection of output from a stoma.
- Undergoing an ostomy surgery, and consequently living with an ostomy appliance is known to have a significant impact on the life of the individual.
- Consequently, ostomates experience a lowered quality of life (QoL).1

Objectives

To measure the incremental (HRQoL) associated with different ostomy appliance technologies and features for a British General Population (BGP) and a Swedish Patient Population (SPP), using a time trade-off (TT0) internet experiment.

Methodology

- An internet-based TTO survey was used to obtain HRQoL associated with eight health states defined by four ostomy appliance technologies and three features applicable to stomas and colostomy devices. Both a BGP and a SPP were investigated.

Results

- Respondents were as follows:
  - British General Population (BGP): 1,063 healthy individuals, recruited through a commercially available e-mail panel.

Demographics of Respondents Included in the Main Analysis

<table>
<thead>
<tr>
<th>Health States</th>
<th>BGP Sample</th>
<th>SPP Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>Median 61.5</td>
<td>Median 64.5</td>
</tr>
<tr>
<td>Gender</td>
<td>M:F (53:47)</td>
<td>M:F (56:44)</td>
</tr>
<tr>
<td>Mean Age (years)</td>
<td>61.5 ± 17.8</td>
<td>64.5 ± 16.4</td>
</tr>
<tr>
<td>Years with ostomy, average</td>
<td>11.3 ± 9.7</td>
<td>11.7 ± 9.9</td>
</tr>
</tbody>
</table>

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- Differences between ostomy appliance technologies have until now only been documented using condition-specific tools.

- These results are not applicable in standard economic evaluations which require a common metric for measuring outcomes, such as QALY-values.

Sensitivity Analysis of Ostomy Appliance Technology Health States

Sensitivity Analysis of Feature Health States

Discussion

- Creation of an ostomy is known to create many challenges in terms of quality of life and functioning.2 In a recently reported study, it was observed that in patients operated for rectal cancer, those with a permanent stoma experienced inferior HRQoL compared to patients without a stoma.3 This supports previous studies which also conclude that stoma patients experience decreased HRQoL.

- Novel technologies and features in ostomy appliances improve leakage, ballooning, PSCs, appliance appearance, comfort and fit and the confidence of the individual may improve the associated HRQoL of the ostomate.

- These new technologies and features are bound to increase the cost of the device, and consequently affect reimbursement. A study from 2015 reported preference and willingness-to-pay for these improvements using a discrete choice experiment.4

- However, for comparing health technologies, health technology assessment (HTA) agencies and bodies like the National Institute for Health and Care Excellence (NICE) prefer cost-utility analyses derived using validated generic instruments such as EQ-5D. These generic instruments have inherent disadvantages such as ineffectiveness to small, but potentially relevant changes in HRQoL. They also do not measure all categories of benefit such as those related to the administration of the treatment itself.

- The inclusion of TTO experiments in addition to the generic instruments can provide a more comprehensive picture of utility increments in novel health technologies such as ostomy devices.

- The present study investigated the utility impact of different ostomy technologies and features in a BGP and a SPP as an TTO internet experiment. This study showed statistically significant improvements associated with both ostomy appliance technologies and features, which confirms the notion that different preference values exist for different ostomy appliances.

- This study is the first to apply the TTO method for comparing HRQoL among different ostomy appliance technologies.

Conclusions

- The present internet-based TTO study showed that addition of these ostomy technologies and features as represented by BGP and a SPP showed statistically significant improvements in HRQoL.
- The health states for ostomy appliances showed an incremental utility ranging from 0.017-0.036 in a British General Population, and from 0.015-0.018 in a Swedish Patient Population. Only minor differences were observed in the incremental utility values between the two populations.
- The sensitivity analysis showed that the BGP outliers had little impact on the incremental utility values, while the SPP outliers increased the incremental utility values.
- The TTO method can be used to measure HRQoL related to ostomy appliances

References


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