The EFQM Model as a Framework for Total Quality Management in healthcare: results of a longitudinal quantitative study.

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Total Quality Management (TQM)

“An integrative management philosophy that aims for continuous improvement in the quality of products and services within an organization (Bou-llusar et.al 2009)”

Various models have been developed to guide organizations towards TQM:

- Malcolm Bridge Quality Award
- European Foundation for Quality Management Excellence Model
Knowledge gap

Previous research neglect two essential characteristics of the TQM philosophy.

1. The holistic perspective on quality management.
2. A continuous cycle of quality improvement that is presumed to be established through a feedback loop of organizational performance.

Previous research focused mainly on testing isolated relations within quality models, within cross-sectional study designs. However, to find evidence for continuous improvement, longitudinal data are necessary.
Research question

Can the EFQM Excellence model serve as a framework for total quality management?

A longitudinal quantitative study.
The EFQM Excellence model
Hospital Quality System

POLICY

[Diagrams and images related to quality system, patient care, and process improvement]
H1: Improvement of results
H2: Continuous improvement
H3: ‘Holistic’ approach

Quality system

Policy

Procedures and protocols

Professionals

Patient involvement

Cyclical quality activities
## Data

### Survey hospital quality managers

<table>
<thead>
<tr>
<th>Year</th>
<th>Hospitals</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>143</td>
<td>112</td>
</tr>
<tr>
<td>2000</td>
<td>117</td>
<td>80</td>
</tr>
<tr>
<td>2005</td>
<td>96</td>
<td>71</td>
</tr>
<tr>
<td>2007</td>
<td>97</td>
<td>62</td>
</tr>
<tr>
<td>2011</td>
<td>95</td>
<td>73</td>
</tr>
<tr>
<td>Total</td>
<td>548</td>
<td>398</td>
</tr>
</tbody>
</table>

73% response
Ecometrics model

A statistical multilevel method to evaluate the validity and the reliability of imperfect measures.

Imperfect because: not all hospitals participated in every measurement year.
Multilevel analyses within a time lag model

To test the hypotheses in a multilevel linear regression model, a time lag model was built.

Diagram showing relationships between Enabler variables from 1995 to 2011 and corresponding Results variables.
## Findings

### Reliability of the scales

<table>
<thead>
<tr>
<th>Enabler Criteria</th>
<th>Internal consistency</th>
<th>Results criteria</th>
<th>Internal consistency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership</td>
<td>0.85</td>
<td>Professionals</td>
<td>0.30</td>
</tr>
<tr>
<td>Policy and Strategy</td>
<td>0.82</td>
<td>Customers</td>
<td>0.69</td>
</tr>
<tr>
<td>HRM</td>
<td>0.96</td>
<td>Society</td>
<td>0.78</td>
</tr>
<tr>
<td>Resources</td>
<td>0.85</td>
<td>Results</td>
<td>0.81</td>
</tr>
<tr>
<td>Process control</td>
<td>0.94</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Findings

• Average scores on enabler and results criteria increased over time. Indicating that the quality system and its results improved over time.

• Variance of scores on enabler and results criteria decreased over time, an indication that hospitals became more similar over time.
Findings

• Increased scores on enabler criteria lead to improvements in results criteria.
• Increased scores results criteria lead to improvements in enabler criteria. This is evidence for the feedback loop of improvement.
• The positive relationship between enabler and result criteria is stronger when all enabler criteria are developed.
Conclusion

Our study suggests that the EFQM Excellence model could serve as a framework for TQM.
Implications

• Hospitals became more quality oriented over time, but also more similar.
• It requires time before the results of quality activities become clearly visible in organizational outcomes.
• The relationship between enabler and result criteria is stronger when all the enabler criteria are managed simultaneously.
Strengths and limitations

• The first study to consider the long-term contribution of applying the EFQM Model as a framework for TQM in healthcare.
• Organizational performance measured by the respondents’ perception and not objective performance.
• Sampling was restricted by the (small) number of hospitals in NL.
• The reliability of the scale for Professionals was inadequate.
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