Costs and cost-effectiveness of Complementary and Alternative Medicine


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Why Economic Evaluations on CAM?

- Limited financial resources in health care
- CAM often used in addition
- Integration into health care plan?
Possible Cost Savings on Provider Level

- China: TCM hospital outpatient and inpatient costs around 30% lower than in conventional hospital
- UK: (3 case studies of intergrative care): 30% less GP visits, 50% reduced drug bill
- Netherlands: patients whose GP has additional CAM training have up to 30% lower healthcare costs

1 WHO Workshop report on Traditional Medicine in primary health care 2007
2 Smallwood Report UK
3 Kooreman Eur J Health Econ 2011
Background

• Careful interpretation of economic analyses
  – Outcome and costs vary widely depending on treatment and context
  – Studies use different:
    – Economics evaluation methods
    – Perspectives

• Types of economic analyses
  – Cost of diseases
  – Full economic analyses
    – Comparison of treatments
    – Costs and benefits
Full Economic Analyses

Difference between two interventions

Cost-effectiveness analysis

Costs: lower costs}

Outcome: better outcome

Higher costs → worse outcome

No higher costs → better outcome

Cost-effectiveness analysis: higher costs, lower outcome → better overall cost-effectiveness.
**Economic Analyses on CAM – A Systematic Review**

- 338 economic evaluations on CAM published
- Nearly all of them from Western countries
- 204 between 2001 and 2010
- 114 full economic evaluations
- 28 higher quality studies

## Economic Analyses (2001-2010)

<table>
<thead>
<tr>
<th>CAM type</th>
<th>All</th>
<th>Full economic evaluations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manipulative/ body practices</td>
<td>45</td>
<td>25</td>
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<tr>
<td>Acupuncture</td>
<td>41</td>
<td>29</td>
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<td>Natural products</td>
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<td>Mind Body Medicine</td>
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<td>Homeopathy</td>
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<td>13</td>
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<tr>
<td>Complex CAM</td>
<td>18</td>
<td>1</td>
</tr>
<tr>
<td>Other CAM</td>
<td>25</td>
<td>12</td>
</tr>
</tbody>
</table>

Cost Savings - Better Outcome and Lower Costs

- 16 (29%) of 56 comparisons made in higher quality studies
- Non-pharmacological treatments:
  - Acupuncture for low back pain\(^1\)
  - Naturopathic care for low back pain\(^2\)
  - Acupuncture for breech presentations\(^3\)
  - Manual therapy for neck pain\(^4\)
  - Tai Chi to prevent hip fractures in elderly\(^5\)

\(^1\)Ratcliffe BMJ 2006, \(^2\)Herrman Altern Ther Health Med 2008, \(^3\)van den Berg CTIM 2010,
Cost Savings - Better Outcome and Lower Costs II

• Supplements
  – Perioperative oral Arginine and Omega-3 fatty acids in colorectal cancer\(^6\)
  – Vitamin K1 in post menopausal women with osteoporosis\(^7\)
  – Vitamin C, E and beta-carotene for cataract prevention\(^8\)

Cost-Effectiveness

Difference between two interventions

Cost-effectiveness analysis

higher costs

lower costs

worse outcome

better outcome

?
Cost-Utility-Analysis

How much do we have to pay to gain one extra year of “perfect quality of life” (QALY) due to the intervention?

Incremental Cost-Effectiveness Ratio (ICER)

\[
\text{ICER} = \frac{\text{Diff. costs (intervention – control)}}{\text{Diff. QALYs (intervention – control)}}
\]
Cost-Utility Analyses
Results from the Systematic Review

• Study quality of the cost-utility analyses of CAM was slightly better than that across all medicine

• Of the 28 Cost-Utility-Analyses comparisons:
  – 18% (n=5) $0 - $10,000/QALY
  – 54% (n=15) $10,000 - $50,000/QALY
Cost-Effective – ICER $0-$10.000

• Acupuncture for Dysmenorrhea, Germany¹
• Acupuncture for low back pain
  – Chronic low back pain, UK²
  – Acute low back pain, Korea³
• Exercise program plus spinal manipulation for low back pain, UK⁴
• Osteopathy for subacute back pain, UK⁵

¹Witt Am J Obstet Gynecol 2008; ²Ratcliffe BMJ 2006; ³Kim BMC CAM 2010, 
⁴UK Beam Trial Team BMJ 2004; ⁵Williams Fam Pract 2004
Cost-Effective – ICER $10,000 - $ 50,000

• Acupuncture, Germany:
  – Headache\(^1\)
  – Osteoarthritis\(^2\)
  – Neck pain\(^3\)
  – Low back pain\(^4\)
  – Allergic rhinitis\(^5\)

• Acupuncture for headache, UK\(^6\)

• Alexander technique or massage for chronic back pain, UK\(^7\)

• Omega-3 fatty acids to avoid death after myocardial infarction\(^8\)

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Complexity of Economic Analyses on CAM

- CAM mainly used as complex interventions
- The theory of many CAM methods predicts lifestyle changes and possible long-term effects
Assumptions and Possible Translations

- Prevention of illness as a result of CAM treatments might result in cost-savings\textsuperscript{1}
  - e.g. less time off from work, less direct costs
- For example, lifestyle intervention for diabetes patients in primary care is cost-effective in relation to standard care\textsuperscript{2}

\textsuperscript{1} Smallwood Report UK
\textsuperscript{2} Jacobs-van der Bruggen Diabetes Care 2009
Conclusion

• A number of high quality studies indicate cost-effectiveness or even cost saving for single CAM treatments.

• Long-term economic impact not known, but aspects such as life style change could have positive economic impact.