Why do we think we know what we know? A metaknowledge analysis of the salt controversy


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SALT: A Love Story

Homophily

The tendency of individuals to associate and bond with similar others.

“Love of the same”
General Hypothesis
Salt reduction leads to population benefits

Report Hypothesis
A report would be more likely to cite another report that drew the same conclusion (supportive, contradictory or inconclusive).
Methods (1)

**Systematic review:** including primary studies; systematic reviews; clinical practice guidelines or consensus statements; and comments, letters, and narrative reviews.

**Classification of reports:** supportive, contradictory, or inconclusive in support of the general hypothesis.
Methods (2)

**Citation network analysis:** Identified citations between selected reports, constructed a directed acyclic graph where each node was a report and edges were directed from a citing report to a cited report.

**Co-authorship network analysis:** Created an undirected network graph where each node was an author, and edges connected two authors who co-signed at least one report (all authors are weighted equally).

**Agreement in primary study selection between systematic reviews:** Assessed the agreement between systematic reviews as to which primary studies they included.
Results of the search

Systematic reviews
- 163 records (MEDLINE)
- 24 records (CDSR & DARE)

Clinical practice guideline
- 287 records (MEDLINE)
- 65 records (WHO)
- 116 records (guideline.gov)
- 51 NICE

Comments, letters, reviews
- 1456 records

27 records based on title/abstract
- 15 records excluded

29 records based on title/abstract
- 18 records excluded

241 records based on title/abstract
- 65 records excluded

7 cost-effectiveness studies
4 ecological studies
8 modeling studies

Primary studies
68 records based on full-text

Trinquart et al., 2016
Results of the search (2)

269 distinct reports

- Primary studies: 68 reports on 60 studies
- Systematic reviews: 14 reports on 10 reviews
- Clinical practice guidelines: 11 reports on 9 guidelines
- Comments, letters, or narrative reviews: 176

<table>
<thead>
<tr>
<th>Conclusion</th>
<th>N (%)</th>
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<tbody>
<tr>
<td>Supportive</td>
<td>146 (54)</td>
</tr>
<tr>
<td>Contradictory</td>
<td>88 (33)</td>
</tr>
<tr>
<td>Inconclusive</td>
<td>35 (13)</td>
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</table>
Results: Citation network analysis

Trinquart et al., 2016
Results: Co-authorship network analysis

Trinquart et al., 2016
Results: Agreement in primary study selection between systematic reviews

Trinquart et al., 2016
Key Messages

• The authors documented a strong polarization of scientific reports on the link between sodium intake and health outcomes.

• A majority of the existing papers are supportive of the salt hypothesis but a substantial minority are not.

• Published reports supporting either side of the hypothesis are less likely to cite contradictory papers.

• There was very little consistency in the selection of primary studies in systematic reviews on the topic.