Making Cross-Country Comparisons on Health Systems and Health Outcomes - What are the Criteria for Study Designs?

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Learning Objectives:
1. Describe at least three challenges that researchers must consider when choosing a study design for cross-country comparisons.
2. List at least three advantages and three disadvantages to using quantitative and mixed methods data for cross-country health care and status comparisons.
3. Formulate suggestions on methods to include cultural differences when conducting cross-country comparisons on health status or health care within the health system context.

Conflict of Interest: Profs Zlotnick, Anderson and Heaslip claim no conflict of interest.
Background

Why is it important to nurses and nursing practice to make cross-country comparisons on health systems and health outcomes?

- Globalization
- Heterogeneity of populations
- Evidence-based practice guidelines
- Nursing comprises the largest healthcare labor force in the world
Study Goal and Approaches

Goal
To examine study design frameworks used to make cross-country comparisons of quantitative or mixed-methods studies assessing health care services and outcomes.

Approaches
- Systematic Review
- Scoping Review
Two Kinds of Reviews Considered

...what is a scoping review and how does it differ from a systematic review?

<table>
<thead>
<tr>
<th></th>
<th>Type of Review</th>
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</thead>
<tbody>
<tr>
<td><strong>Approach</strong></td>
<td><strong>Systematic</strong></td>
</tr>
<tr>
<td></td>
<td>Well-defined question with a known and specific methodology</td>
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<tr>
<td></td>
<td><strong>Scoping</strong></td>
</tr>
<tr>
<td></td>
<td>Broad topics with multiple methodologies</td>
</tr>
<tr>
<td><strong>Goal and Methods</strong></td>
<td><strong>Systematic</strong></td>
</tr>
<tr>
<td></td>
<td>Synthesize known information to identify an answer to a question while assessing the evidence of each study</td>
</tr>
<tr>
<td></td>
<td><strong>Scoping</strong></td>
</tr>
<tr>
<td></td>
<td>1. Examine extent, range or nature of knowledge</td>
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<td></td>
<td>2. Map literature to determine whether systematic review is feasible</td>
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<td></td>
<td>3. Assess range of research or gaps</td>
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Steps of Conducting a Scoping Review

1. Identification of the domains that must be explored;
2. Search and selection of relevant studies;
3. Charting of studies’ findings; and
4. Summarization of the results.

Methods – Steps #1 & #2

1. Identification of the domains that must be explored;
2. Search and selection of relevant studies

**Selection Criteria from CINAHL, PUBMED and PsycInfo**

1. Keywords – Cross country comparison AND Health System AND (Health services OR Health outcomes)
2. Language - English
3. Years - 01/01/2010-12/31/2016
4. Journal Article

**Exclusion by Abstract**

- All Economic Data (n=12); Only Qualitative Data (n=16); A Priori Collaboration or Shared Dataset (n=53); Only One Country (n=18); Policy Review, Systematic Review, Synthesis (n=46)

N=169 → N=13 → N=11 → N=156
Methods - Steps #3 & #4

3. Charting findings of the studies (n=11).
The goal is to identify:
   (a) trends
   (b) gaps
   (c) consistencies with other research
   (d) unusual/surprising issues
   and

4. Summarize the results

Findings - Trends

Mapping the results – ~100% of countries were high income countries
Country selection - 50% did not specify rationale for country selection
Country comparisons – 70% provided virtually not cultural context
Findings - Gaps

3. Theory-driven – None of the studies (n=11) were theory-driven.
Findings - Consistencies & Inconsistencies

• Several studies focused on:
  – policy or health system differences
  – differences in morbidity and mortality using a variety of existing measures that were typically used in the country.

• Inconsistencies in cross-country comparisons were due to differences in
  – data collection and
  – the use of inconsistent measures and categorizations.
Findings – Unusual/Surprising Issues

• Amazingly few quantitative or mixed methods studies (n=11) without a priori country-coordination were found in the peer-reviewed literature.

• Given the topic of cross-country studies, it was surprising that cultural context was often ignored.

• Despite the common use of socioeconomic and other indicators of inequity, only one study used measures such as the GINI index.
Summarization of Results

1. Study design frameworks for cross-country comparisons did not follow basic recommendations made by Cacace et al. (2013), to include:
   • explicit country selection criteria,
   • guiding theory,
   • data type (i.e., quantitative, mixed-methods),
   • ascertainment and validation of measurements,
   • synthesis of findings, and
   • contribution.

2. Focus was virtually only on high-income countries.

3. Country’s culture and population composition (i.e., majority and minority groups) rarely were taken into account.

4. Surprisingly few cross-country studies without a priori coordination were published.

5. Awkward comparison of non-similar measures and methodologies.

Discussion

Especially in an internationally recognized and respected discipline such as nursing, there is a need for more cross-country collaborations and comparisons. Clear guidelines are needed. Below was modelled after STROBE (von Elm et al., 2008):

<table>
<thead>
<tr>
<th>Area</th>
<th>Recommendation</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title and Abstract</td>
<td>Indicate “cross country” comparison</td>
<td>Cross country is in the MESH and CINAHL thesaurus.</td>
</tr>
</tbody>
</table>
| Background                  | 1. Indicate rationale for country selection  
2. Describe cultural specific context that will need to be taken into account  
3. Introduce theory or model that will guide the comparison. | 1. In research, internal validity dictates providing explicit description of all study elements, including: selection of variables, samples, instruments, etc.  
2. As cultural is linked to health variables, these elements must be identified.  
3. Quantitative and mixed-methods studies are deductive, and therefore, theory- or model-driven. |
Discussion
Continued guidelines - modelled after STROBE (von Elm et al., 2008):

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<thead>
<tr>
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<tbody>
<tr>
<td>Methods – measures</td>
<td>Delineate procedure to make measures comparable.</td>
<td>Countries used different measures; study results may be biased if efforts are not made to make these measures comparable.</td>
</tr>
<tr>
<td>Methods – sample</td>
<td>Describe population, sampling frame, sampling technique and sample.</td>
<td>Different countries have different ethnic-racial compositions and at-risk population groups. These differences can introduce bias if not taken into account.</td>
</tr>
<tr>
<td>Methods – Data sources</td>
<td>Describe all data sources and default values for all variables reported in the study.</td>
<td>Default values may differ by data source and introduce bias.</td>
</tr>
<tr>
<td>Results</td>
<td>Describe samples from both countries including demographic differences (and specifying ethnic-racial or at-risk groups) in a table format.</td>
<td>Countries have different population groups, and only by specifying them a priori can inequities be revealed.</td>
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</tbody>
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Discussion
Continued guidelines - modelled after STROBE (von Elm et al., 2008):

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<tr>
<td>Discussion</td>
<td>Summarize key results with respect to hypotheses and cross country comparison.</td>
<td>Contribution to cross country science.</td>
</tr>
<tr>
<td>Limitation</td>
<td>Specify aspects of comparisons where country or cultural differences were inexact.</td>
<td>Provides future authors information on ways to make improvements to research.</td>
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<tr>
<td></td>
<td>Note limitations in sampling, representation of the target population.</td>
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</table>

A Question
to health professionals participating at an international research congress?

What cross-country collaboration would you recommend (or agree to join) to promote:

- inclusive, culturally-appropriate nursing care,
- healthy lifestyles,
- dissemination of health information, and
- people-centered, health policy change?
Thanks!

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