Secondary Data Analysis
On Cherry picking and Rediscovering the Wheel

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This is where everything started!!

Sorry, I am too busy!!
But.......

I can work with this crazy Italian guy.....perhaps...

This was the view from my window for 6 months!!!
All my friends though I had lost my mind!!!

Value of Combined Assessment of Physical Health and Functional Status in Community-Dwelling Aged: A Prospective Study in Florence, Italy

Table 7. Multivariate Logistic Regression: The Risk of Mortality During 1-Year Follow-up for Those With Sensory and Lower Disability as Compared to Those With No Disability. Adjusted for Nonental Conditions

<table>
<thead>
<tr>
<th>Variable</th>
<th>OR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (yrs)</td>
<td>1.04 (1.01-1.06)</td>
</tr>
<tr>
<td>Age (yrs)</td>
<td>1.04 (1.01-1.06)</td>
</tr>
<tr>
<td>Sensory disability</td>
<td>1.04 (1.01-1.06)</td>
</tr>
<tr>
<td>Lower disability</td>
<td>1.04 (1.01-1.06)</td>
</tr>
<tr>
<td>Number of falls and fractures</td>
<td>2.16 (1.10-4.24)</td>
</tr>
<tr>
<td>Number of hospitalizations</td>
<td>2.16 (1.10-4.24)</td>
</tr>
<tr>
<td>Number of contacts with doctor</td>
<td>2.16 (1.10-4.24)</td>
</tr>
<tr>
<td>Number of medications</td>
<td>2.16 (1.10-4.24)</td>
</tr>
</tbody>
</table>
**Secondary vs. Primary data Analysis**

- Easy access to relatively “clean” data
- Study paradigm already explicit
- Collaboration with experienced investigators
- “Trust” on the data already established ($!@!!)
- Previous papers as template (methods section)
- Fast track to publication
- Possible with no funding ($!@^%$%$!!!!!)
- Possibility of “add on” studies (repository)
- Future data collection . . . .

**Secondary vs. Primary data Analysis**

- There are RULES!! (proposal approval, IRB etc.)
- First to come first to be served
- May need strong and continuous mentorship
- Some time... unfriendly collaborators
- Privacy and confidentiality
- Some journal only publish recent data
- High risk of duplication (check, check,$!@*$!!)
- High risk of “So what!”
- Need to adapt hypothesis to the data available

**Aging and Trajectory of Function**

**BLSA/InCHIANTI Paradigm**

A Hierarchical Network of Measures

<table>
<thead>
<tr>
<th>Homostatic Network</th>
<th>Physiological Domains Relevant for Mobility</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hormones</td>
<td>CNS</td>
<td>Mobility</td>
</tr>
<tr>
<td>Nourishment</td>
<td>PNS</td>
<td></td>
</tr>
<tr>
<td>Inflammation</td>
<td>Muscles</td>
<td></td>
</tr>
<tr>
<td>Autonomic</td>
<td>Bone Joints</td>
<td></td>
</tr>
<tr>
<td>Ox Stress</td>
<td>Energy</td>
<td></td>
</tr>
<tr>
<td>Nutritional</td>
<td>Feedback</td>
<td></td>
</tr>
<tr>
<td>Phys Activity</td>
<td>Self Report</td>
<td></td>
</tr>
</tbody>
</table>

InCHIANTI
Cresce nei Chianti
Stefano Bianchetti
Longitudinal Study of Lipids and APOE in the Development of AD and AD Pathology (CHIANTI), in collaboration with Michelle Mielke (JHU) and Susan Resnick (LBNL-NIA).

- Plasma Lipids (≈4,000 samples)
  - Targeted Lipidomics using HRMS/MUIMS and Multiplex Reaction Monitoring (M. Paukstis, JHU).
  - Sphingolipids (e.g., Ceramides, Gangliosides, S-1-P).
  - Fatty acids (e.g., Omega-3 and Omega-6).
  - Cholesterol and cholesterol esters.

Outcomes: Cognitive-related
- Adjusted diagnostons of dementia, AD and MCI.
- Cognitive evaluation (memory, executive function, language, attention, spatial ability).
- MRI imaging (brain & lesion Volumes).
- PET measures of regional cerebral blood flow.
- 11C-PB-PET imaging (beta-amyloid deposition).

Data Sharing
1. BLSA Website
   - BLSA Design
   - MOP
   - Codebook
   - Forms
2. Submission Process
   - Brief Proposal Submitted to the BL8A PI
   - Approval - CONCEPT to NIH CRM
   - Approval - Paper Grant Proposal
3. Collaboration
   - Training Young Investigators
   - Data Management
   - Preliminary Data
   - A source for scientists

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