A Gap Analysis in the Use of Synthetic Controls in HSRProj Research Database

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Brendan Jackson-Fowl, Sc.M, DO Student
Ranjodh Singh, DO Student
Eric Basile, DO Student
Touro College of Osteopathic Medicine
The gold standard for any research study has long been the randomized control trial (RCT).

In an controlled environment like animal studies or small scale human studie (i.e. novel surgical procedures or pharmaceuticals) RCT are best

Using RCTs for population studies are however challenging practically

Alternative methods have been proposed for evaluating population studies due to these limitations (i.e. interrupted time series, comparative cohort, etc.)
Background: Synthetic Controls

- Originally a tool in economic modeling, synthetic controls (SC) have recently been adapted to be used in other fields.
- Synthetic controls try to eliminate some of confounding issues that can arise in matching and difference in difference methods by better controlling for changes over time within the control population.
- Due to its adaptability and increased practicality, synthetic controls are being increasingly used in the health services field.
Objective

Demonstrate the absence in the number and rate of research articles generation in the HSRProj database utilizing SC as a metric of evaluation of health services, population health and healthcare policy initiatives.
Methodology

Inclusion Criteria for Studies of Interest

- HSRProj Database full download (36,219 studies)
  - Initial filtration for relevant articles
  - Mesh words: “Public Health”, “Population Health”, “Public Policy”

Studied that failed to include Mesh words and any duplicate studies (35,851 studies)

- Studies that included Mesh words and past the initial filtration step (368 studies)
  - Bilateral second filtration using “synthetic controls” or “randomized”

- Studies that used “synthetic control” methodology (2 studies)

- Studies that used “randomized control” methodology (73 studies)
The number of articles that used RCT: PubMed n=597, ProQuest public health n=184, and HSRProj n=73.

The number of articles that used SC: PubMed n=27, ProQuest n=19, and HSRProj n=2.
An Increasing Trend in the Use of Synthetic Controls
Conclusions

❖ Other notable databases suggest a shift towards using SC in population health, health services and healthcare policy studies.

❖ In terms of trendlines with regards to SC-based article generation vs. time, HSRProj’s database appears to be behind other databases.
Future Works

- The use of SC in health service is still in its early stages therefore, there needs to be further analysis and more pilot studies using SC to convince researchers of its efficacy.
- Early results indicate SC are good tool for health services and public health research.
- Investment by HSRProj in projects that use SC will ensure that they stay at the forefront of health services research as well as pioneering novel methodologies to drive the field forward.
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References