

1.02 Quasi-experimental study designs

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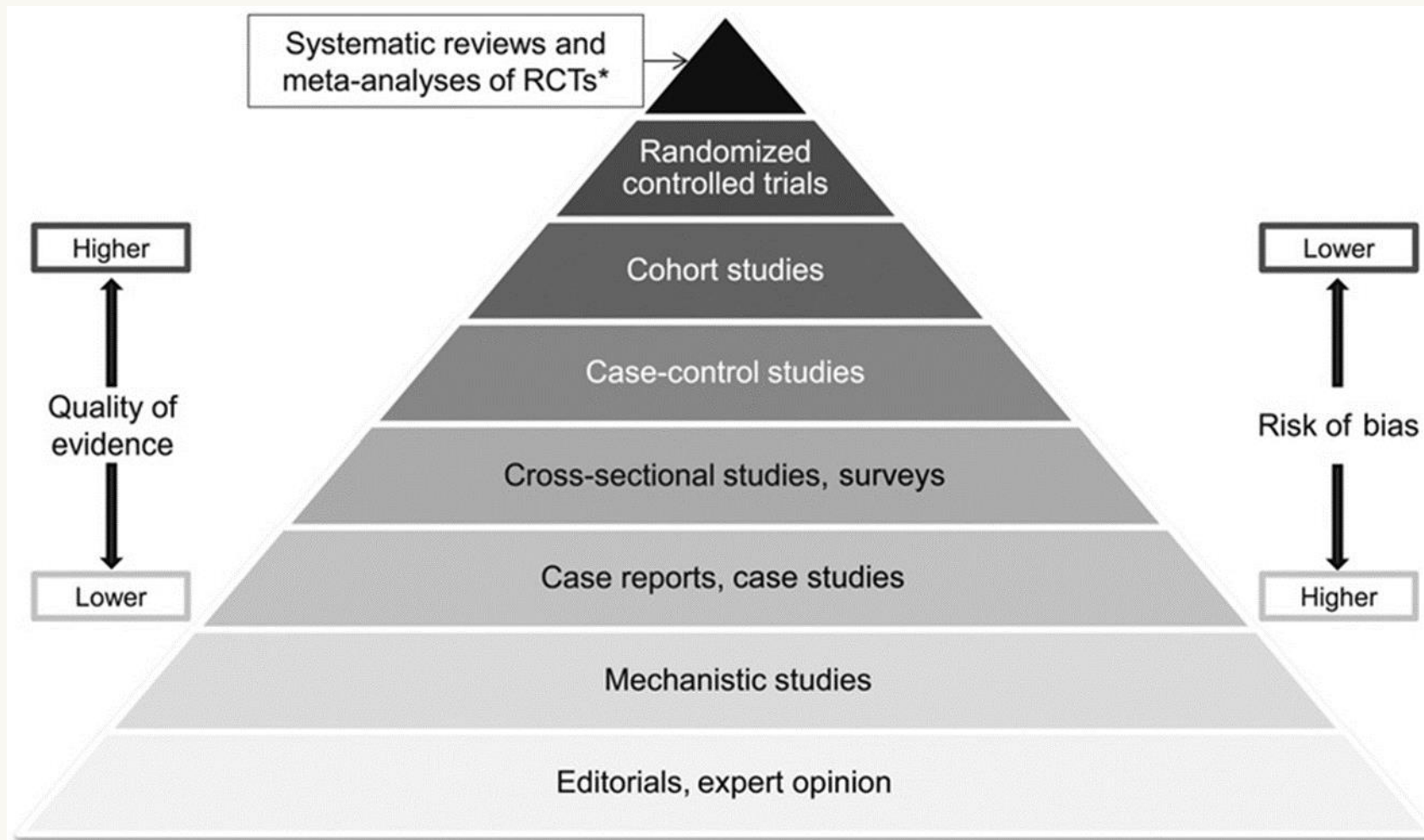


Midlands and Lancashire
Commissioning Support Unit

// I believe in evidence. I believe in observation, measurement, and reasoning, confirmed by independent observers. I'll believe anything, no matter how wild and ridiculous, if there is evidence for it. The wilder and more ridiculous something is, however, the firmer and more solid the evidence will have to be.

—*Isaac Asimov*

The hegemony of RCTs



So what's the problem?

Traditional epidemiological study designs like cohort and case-control studies are less useful as intervention studies.

RCTs are not always possible, in particular for programmes targeted at the population level. And there is often a need to retrospectively evaluate interventions which have already been implemented.

Risk of an evaluative bias where interventions not amenable to randomised control trials are either poorly evaluated or not evaluated at all.

Quasi-experiments

// Studies that can be used to estimate the causal impact of an intervention on an outcome in a similar manner to experimental designs but without the element of random assignment to treatment or control.

aka "queasy"
experiments

Causal inference & counterfactuals

Q. What would have happened if?

Counterfactual outcome: the outcome that would have happened if the treatment was different.

Causality boils down to comparing actual outcomes with counterfactual outcomes (or what would have happened if things had been different?)

QE study designs

- Interrupted time series (day 1)
- Retrospective matched controls (day 2)
- Regression discontinuity
- Synthetic controls