

# Systematic review preparation

Nathan Khadaroo-McCheyne

## Preparation to do list:

- Look at some protocols
- Choose a protocol
- Look at what software could be useful (litsearchr?)
- Do some initial scoping
- Pre-register the protocol

## Exploring protocols:

**1) Prisma** The most used and most widely praised protocol, it doesn't seem adapted for non interventional research though.

**2) NIRO** Like Prisma, this isn't intended for method reviews. There is a lot to like here though. Especially regarding transparency and openness.

I think this should be the basis of the protocol which I will then adapt for a methods review.

**3) Other?** One interesting paper is Detecting, quantifying and adjusting for publication bias in meta-analyses: protocol of a systematic review on methods by Mueller, et al (2013).

Their data collection sheet (appendix 1) could be something I draw from a lot when writing the protocol.

## Bibliography:

Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. (2010). Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *Int J Surg*, 8(5), 336-341.

Mueller, K. F., Meerpohl, J. J., Briel, M., Antes, G., von Elm, E., Lang, B., ... & Bassler, D. (2013). Detecting, quantifying and adjusting for publication bias in meta-analyses: protocol of a systematic review on methods. *Systematic reviews*, 2(1), 1-4.

Pickering, J.S., Topor, M., et al (2020). Non-Interventional, Reproducible, and Open (NIRO) Systematic Review Guidelines v0.1

# Appendix:

## Appendix 1: Full data extraction sheet from Mueller, et al (2013)

**Baseline Data:**

**Article Number:**

**Author (year):**

**Language:**

**Title:**

**Journal:**

**Type of report:**

- Abstract
- Commentary / Editorial
- Guidelines / HTA – report
- Methodological study
- Narrative Review
- Systematic Review
- Other: \_\_\_\_\_

**Funding Source:**

- Governmental / public
- Charity / private not for profit
- Industry / private for profit
- Not funded / only in house source
- Not reported
- Reported, but type of funding unclear

**Study objectives:**

- New method
- Established method
- Evidence of usefulness/limitations
- Extent of publication bias
- Comparison of various methods

**Underlying assumptions:**

- True treatment effect is zero
- True treatment effect is small or moderate but not zero
- True treatment effect is big
- Not described
- Other: \_\_\_\_\_

**Method:**

Name of the method, as proposed by the author: \_\_\_\_\_

Short description of the method:

**Purpose of the method:**

- Detecting bias
- Quantifying bias
- Adjusting / Reducing bias
- Preventing bias
- Other: \_\_\_\_\_

**Classification of method, as proposed by the author:**

- Study registration
- Literature search
- Funnel plot
  - Tests for tunnel plot asymmetry
  - Methods to adjust for publication bias based on funnel plots (trim and fill)
- Selection models
- Selection models with data augmentation
- Sensitivity analyses based on selection models
- New statistical approaches
- Updating reviews
- Publication process
- Research ethics/policy
- Confirmatory studies
- Other: \_\_\_\_\_

**If no assignment by author made, method could be classified as:**

- Study registration
- Literature search
- Funnel plot
  - Tests for tunnel plot asymmetry
  - Methods to adjust for publication bias based on funnel plots (trim and fill)
- Selection models
- Selection models with data augmentation
- Sensitivity analyses based on selection models

- New statistical approaches
- Updating reviews
- Publication process
- Research ethics/policy
- Confirmatory studies
- Classification not possible
- Other: \_\_\_\_\_

**On what stage of the literature review process the method is relevant:**

- Before literature review
- In literature review
- After literature review

**What form of bias the method pays attention to:**

- Publication bias
- Grey literature bias
- Language bias
- Reporting bias
- Abstract bias
- Time delay bias
- Database index bias
- Citation bias
- Duplicate bias
- Media attention bias
- Reporting bias
- Other: \_\_\_\_\_

**Any definition given for publication bias:**

**Resources required to use the method:**

- Special software
- Costs, how much:
- Statistical expert
- Time, how much:
- Other: \_\_\_\_\_
- not described

**Pros and Cons of the method, as described by the author:**

- Not described by the author

- Pros:
- Cons:

**Compared to what other method:**

- Study registration
- Literature search
- Funnel plot
  - Tests for tunnel plot asymmetry
  - Methods to adjust for publication bias based on funnel plots (trim and fill)
- Selection models
- Selection models with data augmentation
- Sensitivity analyses based on selection models
- New statistical approaches
- Updating reviews
- Publication process
- Research ethics/policy
- Confirmatory studies
- Other: \_\_\_\_\_
- None

**Best group to use the method for, as described by the author:**

- Not described
- Large number of studies (>100)
- No significant heterogeneity in the studies included
- Only for continuous outcomes
- Only for dichotomous outcomes
- Other: \_\_\_\_\_

**Method has been applied in a meta-analysis / systematic review of real world data:**

- Not reported
- Yes, with success
- Yes, without success
- Yes, with no report of the result
- If Yes in which data – set - clinical - not-clinical
- Yes, in an empirical dataset for which one can be reasonably confident that all studies conducted have been included (e.g. datasets from trial registries from medical regulatory authorities such as FDA or EMA).
- No

**Reviewer's commentary (e.g. on study's validity, scientific rigour, method's usefulness and limitations, any empirical evidence provided):**