

# Validated instruments for measuring responsible conduct of research (RCR): a systematic review



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# Background



High research integrity is essential for research to make progress and for society's trust in the research that is carried out



Research misconduct and questionable research practices (QRP) has a devastating role in relation to the credibility of the research



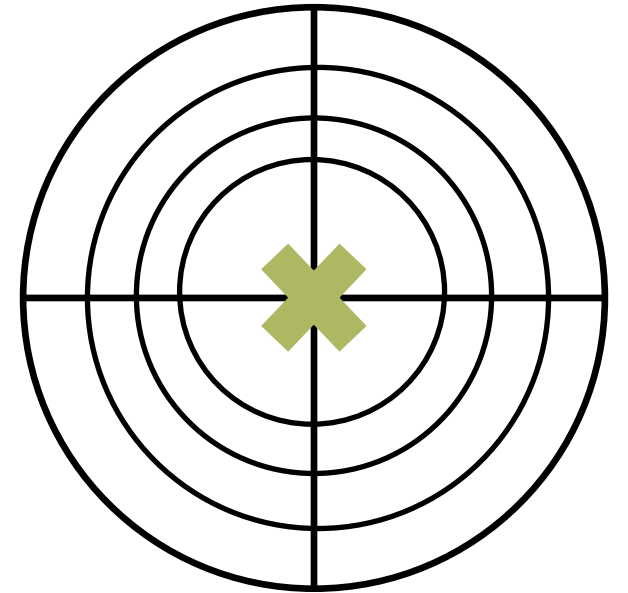
Knowledge of the attitudes, practices and actions of researchers is pivotal to maintain and support a high integrity



# Aim

Overview of validated instruments for measuring **Responsible Conduct of Research (RCR)** and / or **Questionable Research Practices (QRP)** among researchers (including PhD students)

By identifying and critically assessing studies that have validated these instruments

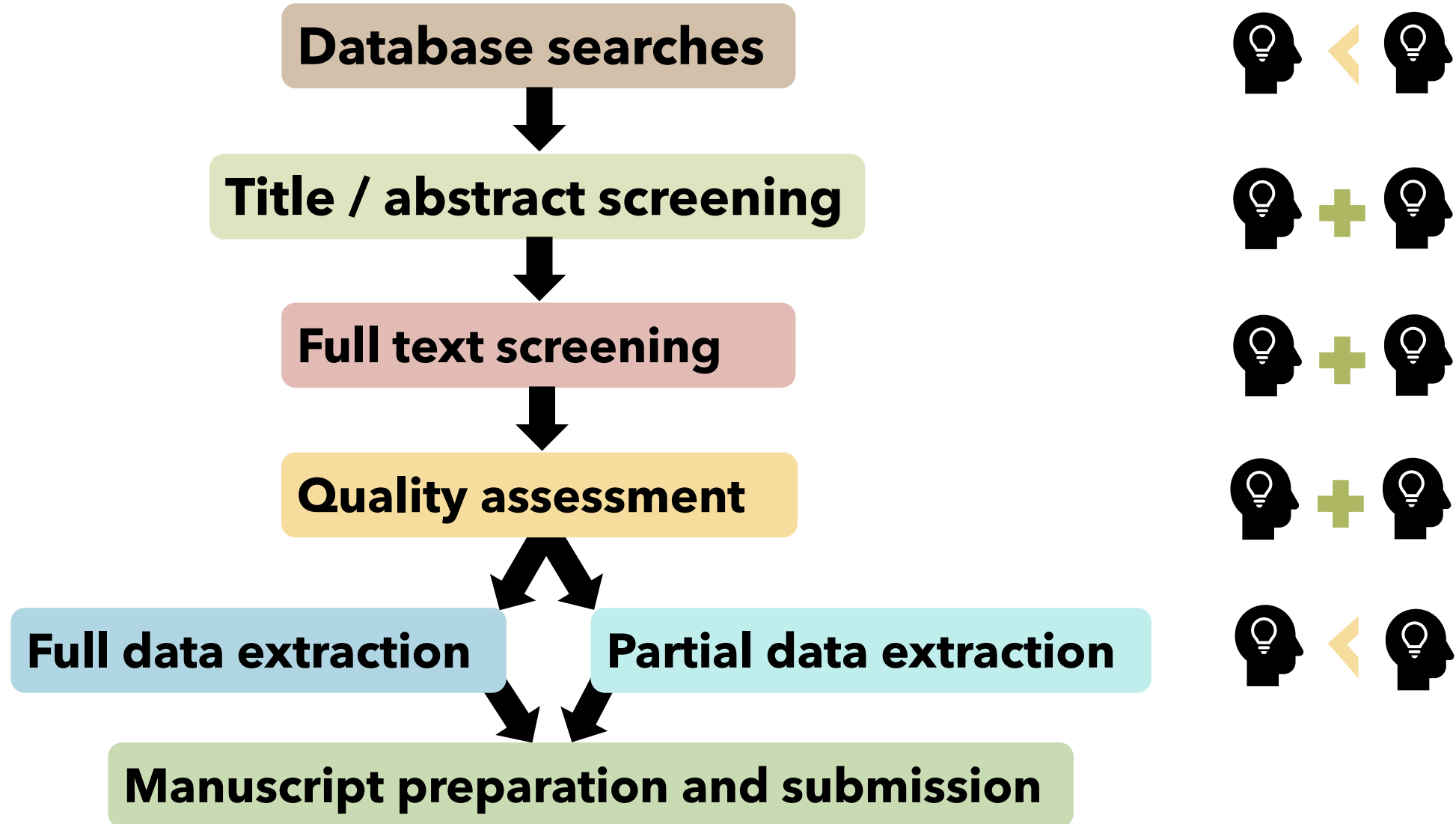


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Protocol is available in Open Science Framework ([doi.org/10.17605/OSF.IO/97RGM](https://doi.org/10.17605/OSF.IO/97RGM))



# Study flow



# Methods

## Inclusion criteria



- Studies **validating** RCR or QRP survey instruments (researchers)
- All study types
- All years (no date restriction)

## Exclusion criteria



- Application studies (no validation of instrument)
- Studies solely investigating students as population
- Studies in other languages than Danish, Dutch, English, French, German, Italian, Norwegian, Spanish, Swedish



# Methods

## Databases searched:

Medline, PsycINFO, Scopus, Academic Search Premier

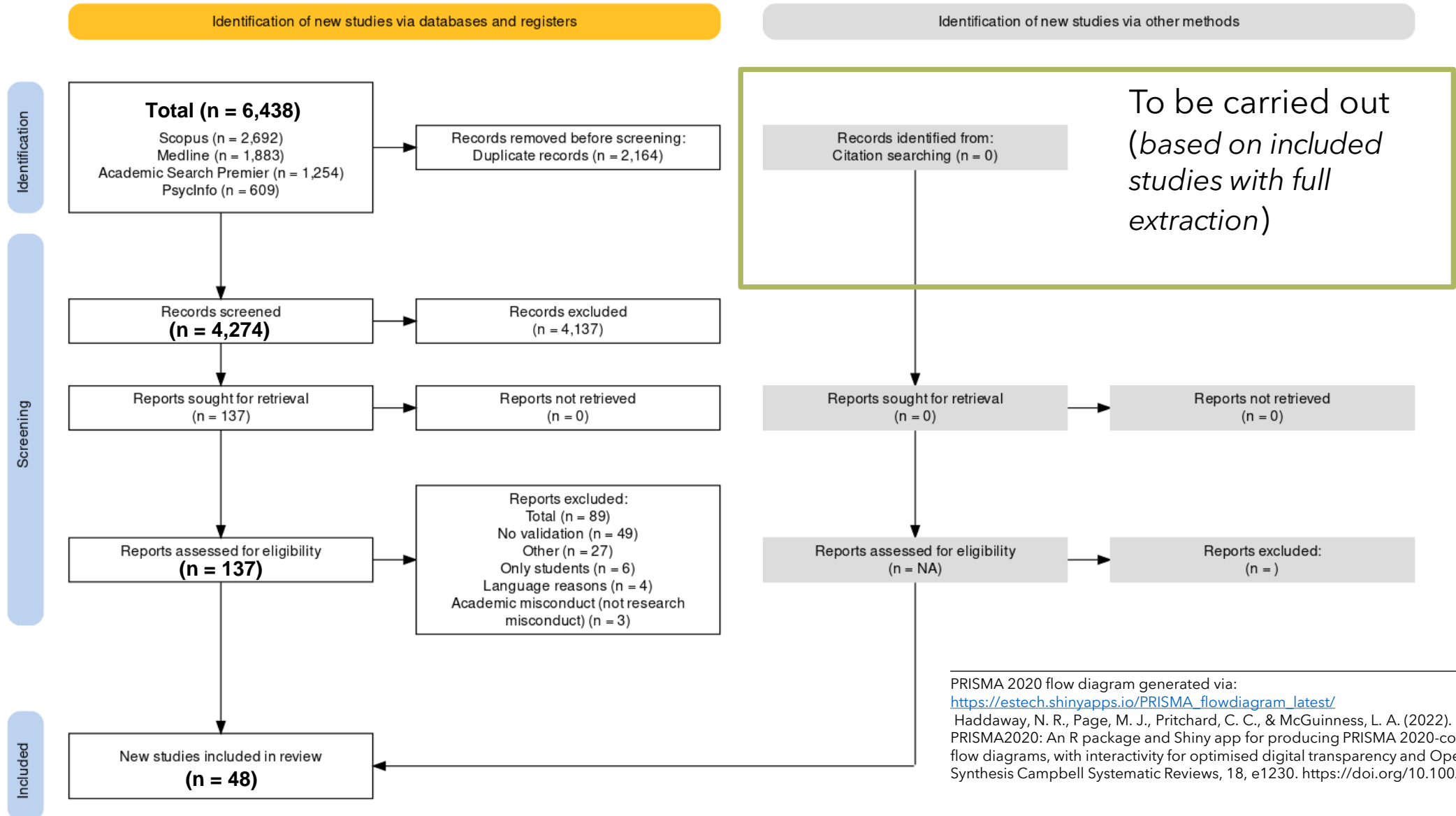
## Search:

Search string in Ovid MEDLINE(R) ALL

- |    |  |   |
|----|--|---|
| 1  | Scientific Misconduct/   | <b>Search block: Research misconduct, QRP, research ethics</b>                |
| 2  | Plagiarism/  |   |
| 3  | Ethics, Research/  |   |
| 4  | (((Research* or Academic* or Scientific or scientist*) adj2 (misconduct or fraud or malpractice* or dishonest* or integrity or decision making or misbehavi* or cheat*)) or (ethical adj2 (research* or scienti*) adj2 (conduct* or behavi*)) or (Questionable adj2 research adj2 practice*) or (Questionable adj2 research adj2 behavior) or (Questionable adj2 research adj2 behaviour*) or ((Fabricat* or falsif*) adj2 (data or result* or image*)) or Plagiari* or (Responsible adj2 research adj2 practice*) or (Responsible adj2 conduct adj2 research) or research ethics or data irreproducibility or data reproducibility or reproducible research or (reproducibility adj2 research)).mp. |   |
| 5  | 1 or 2 or 3 or 4 (research misconduct)   |   |
| 6  | "Surveys and Questionnaires"/  | <b>Search block: survey / questionnaire / tool + test / pilot / validated</b> |
| 7  | Pilot Projects/  |   |
| 8  | 6 and 7  |   |
| 9  | (Develop* or Test* or Pilot* or valid* or verify* or substanti* or reliab*).mp.  |   |
| 10 | 6 and 9  |   |
| 11 | (Survey* or Question* or Scale* or Instrument* or tool*).mp.   |   |
| 12 | 7 and 11   |   |
| 13 | ((Survey* or Question* or Scale* or Instrument* or tool*) adj10 (Develop* or Test* or Pilot* or valid* or substanti* or reliab*)).mp.  |   |
| 14 | 8 or 10 or 12 or 13  |   |
| 15 | 5 and 14   |   |



# PRISMA



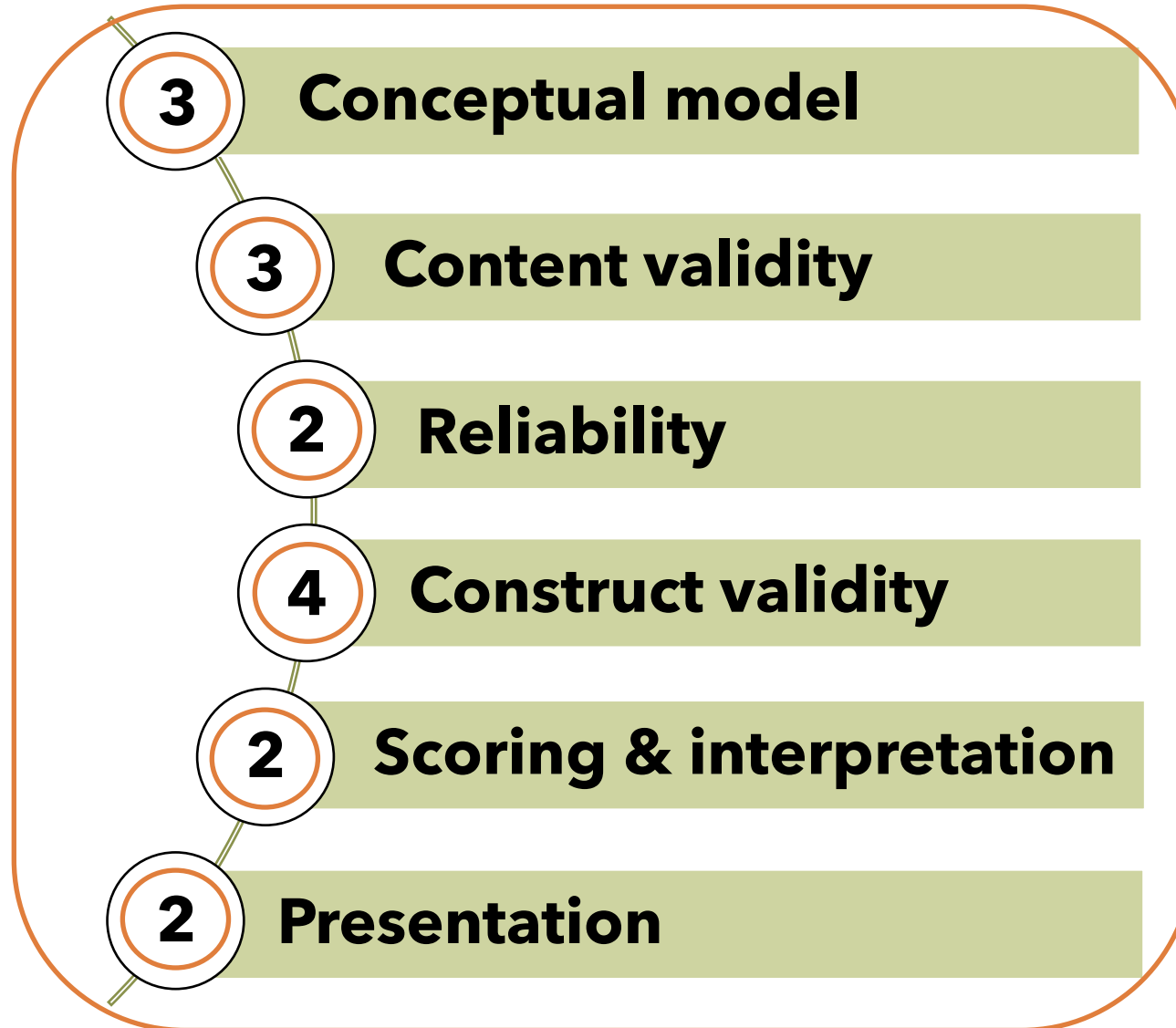
# Quality assessment

- No specific quality assessment tool exists (to our knowledge)
- A truncated version of "*Checklist to operationalize measurement characteristics of patient-reported outcome measures*" was used (based on COSMIN)
- Based on the quality assessment, studies were divided into "*full data extraction*" or "*partial data extraction*"





# Checklist domains



## Scale



## No scale



NA

NA

NA



	Scale		No scale	
<b>Full data extraction</b>	AbdElHafeez 2022 Asman 2019 Broome 2005 DuBois 2016 Fisher 2013 Han 2023 Haven 2021 Holm 2017 Kandeel 2011 Kattenbraker 2008 Martinson 2013 Pan 2020	Pearlman 2013 Poorolajal 2012 Raj 2021 Rankin 1997 Rathore 2015 Schroter 2018 Shamsoddin 2020 Solomon 2022 Tajalli 2022 Tjldink 2016 Wester 2008 <b>Total=23</b>	Artino 2019 Baerlocher 2010 Boulbes 2018 Bouter 2016 Breet 2018 Broome 2010 Chin 2023 Mavis 2019	Saberi-Karimian 2018 Sacco 2019 Talari 2022 Vasconcelos 2022 Okonta 2013  <b>Total=13</b>
<b>Partial data extraction</b>	Abbasiyan 2018 Baleghi Damavandi 2019 Farooq 2022 Gerrits 2020 Godecharle 2018 Holm 2018 Sakurai 2021 Taylor 2012 Thrush 2007  <b>Total=9</b>		Alshogran 2018 Liao 2018 Pars 2018  <b>Total=3</b>	



# Future work

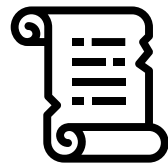


## **Data extraction**

- Tool based rather than study based



## **Search update + citation searches**



## **Full paper**

# Thank you for your attention!



Protocol is available in Open Science Framework



Conceptual model	1) Has the PRO construct to be measured been specifically defined? 2) Has the intended respondent population been described? 3) Does the conceptual model address whether a single construct/scale or multiple subscales are expected?
Content validity	4) Is there evidence that members of the intended respondent population were involved in the PRO measure's development? 5) Is there evidence that content experts were involved in the PRO measure's development? 6) Is there a description of the methodology by which items/questions were determined (e.g., focus groups, interviews)?
Reliability	7) Is there evidence that the PRO measure's reliability was tested (e.g., test-retest, internal consistency)? 8) Are reported indices of reliability adequate (e.g., ideal: $r \geq 0.80$ ; adequate: $r \geq 0.70$ ), or otherwise justified?
Construct validity	9) Is there reported quantitative justification that single scale or multiple subscales exist in the PRO measure (e.g., factor analysis, item response theory)? 10) Are there findings supporting expected associations with existing PRO measures or with other relevant data? 11) Are there findings supporting expected differences in scores between relevant known groups? 12) Is the PRO measure intended to measure change over time? If YES, is there evidence of both test-retest reliability AND responsiveness to change? Otherwise, award 1 point if there is an explicit statement that the PRO measure is NOT intended to measure change over time.
Scoring & interpretation	13) Is there documentation how to score the PRO measure (e.g. scoring method such as summing or an algorithm)? 14) Has a plan for managing and/or interpreting missing responses been described (i.e., how to score incomplete surveys)? 15) Is information provided about how to interpret the PRO measure scores [e.g. scaling/anchors, (what high and low scores represent), normative data, and/or a definition of severity (mild -> severe)]?
Respondent burden & Presentation	16) Is the time to complete reported and reasonable? OR, if it is NOT reported, is the number of questions appropriate for the 17) Is there a description of the literacy level of the PRO measure? 18) Is the entire PRO measure available for public viewing (e.g., published with the citation, or information provided about how to access a copy)?
Extra	In this study, could people answer anonymously?

