Increasing research value, reducing waste
Interventions to improve adherence to reporting guidelines in the context of the MiRoR project

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Key message

Improving compliance with reporting guidelines in health research will enhance reproducibility. This will increase research value and reduce waste.

Questions

1. How could authors of studies in health research improve the way they use reporting guidelines?

2. Should the efforts of improving compliance with reporting guidelines be focused on stricter journal policies or on better training for researchers?
The Methods in Research on Research (MiRoR) Project

Reporting guidelines: the key for reproducibility

My PhD project: Assessing interventions to improve adherence to reporting guidelines in health research

What has been done to improve compliance with reporting guidelines?
The Methods in Research on Research (MiRoR) Project

Goals: To increase research value and reduce waste in health research.

- In 2010, 200,000,000,000€ wasted in the USA (85% of biomedical research investment)\(^1\).

  - Main reason: lack of reproducibility

Reproducibility

- Ability of a researcher to duplicate the results of a prior study using the same materials as were used by the original investigator.

- Minimum necessary condition for a finding to be believable and informative.

The Methods in Research on Research (MiRoR) Project

Network (45 members):

- 15 students
- High level senior researchers with expertise on meta-research
- Partner institutions (The BMJ, BioMed Central, Cochrane, EQUATOR)

Field: 15 PhD transdisciplinary projects covering different areas of meta-research:

- Methods of research (study design, statistics, or ethics)
- Reporting of research (reporting standards)
- Evaluation of research (peer review)
What are RGs? Sets of recommendations for reporting research methods and findings.

CONSORT for reporting randomized trials (first RG, 1996).
STROBE for observational studies.
PRISMA for systematic reviews.

Have they improved the quality of reporting?
The use of a few RGs is associated with improved reporting. But the current levels of adherence to RGs are still suboptimal:

www.equator-network.org/resource-centre/library-of-health-research-reporting

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What is their ultimate goal? Enhance transparency, accuracy, and therefore reproducibility of research.

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Reporting guidelines (RGs): the key for reproducibility

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- What is their ultimate goal? Enhance transparency, accuracy, and therefore reproducibility of research.
- When to use them? Nowadays, 362 RGs (and counting!) for different research areas and study designs².
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- Have they improved the quality of reporting? The use of a few RGs is associated with improved reporting. But the current levels of adherence to RGs are still suboptimal:
  - 86% of reviews assessing adherence to RGs concluded that reporting quality was inadequate, poor, or suboptimal^3.

My PhD project: Assessing interventions to improve adherence to reporting guidelines in health research

Goal

To investigate and assess actions to increase compliance with RGs in health research.
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Structure
1. Sub-project 1: To explore what interventions to improve compliance with RGs have been evaluated and to collect suggested ideas.
2. Sub-project 2: To identify and evaluate barriers and facilitators for the interventions identified in Sub-project 1.
3. Sub-project 3: To assess the most promising intervention.

Expected impact
To improve the reporting quality of studies in health research in order to improve reproducibility.
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What has been done to improve compliance with reporting guidelines?

- Different initiatives aiming to improve compliance with reporting guidelines assessed in recent years.

**Examples**

1. Writing aid tools for authors.
2. Statistician involvement in the design of a study.

- Some of these actions have not been shown to have a benefit.
- Others show better but still suboptimal levels of reporting.

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What has been done to improve compliance with reporting guidelines? Endorsement of reporting guidelines

Journal endorsement of reporting guidelines: Support of RGs by health care journals. Different degrees:

1. Weak endorsement: To write an editorial statement endorsing a number of reporting guidelines.

2. Intermediate endorsement: To recommend in journal’s ‘Instructions to Authors’ to follow the relevant reporting guidelines.

3. Strong endorsement: Or to require authors to submit the relevant checklist and/or flow diagram together with their manuscript.

- Trials, Plos ONE, or BMJ Open follow this policy and make available the original checklists submitted by authors.
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Problem

There exist discrepancies between what authors say that they report (through the checklist) and what they actually report.
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Example on CONSORT Item 8a: Method used to generate the random allocation sequence

- What authors claim: CONSORT Item 8a is reported in pg. 7.
- What authors report in the paper: "[...] the study nurse randomly opened a preformed envelope containing the allocated [...]"

Discrepancy: CONSORT Item 8a not reported adequately.

Possible reasons:
- Authors do not pay enough attention to CONSORT.
- Some items are not understood and therefore not properly reported.
- Reviewers are not accurately looking for adequate reporting:
  - They might not be inspecting the checklist because they might be wrongly reassured.

Possible implications:
- Lack of transparency and accuracy: no reproducibility.
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Thank you!

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