



Marie Skłodowska-Curie Actions
Innovative Training Networks (ITN)
European Joint doctorate (EJD)
H2020-2015



METHODS IN RESEARCH ON RESEARCH (MIROR)

Interventions to improve adherence to Reporting Guidelines in health research: a scoping review

PEERE International Conference on Peer Review
7-9th March, Rome



This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 676207

Research team



Research fellow
David Blanco
(U. Politècnica de Catalunya)



Co-Supervisor
Jamie Kirkham
(U. Liverpool)



Collaborator
David Moher
(Ottawa Hospital Research Institute)



Supervisor
Erik Cobo
(U. Politècnica de Catalunya)



Co-supervisor
Isabelle Boutron
(U. Paris Descartes)



Collaborator
Douglas G Altman
(Oxford University)

Introduction

- Approximately 85% of all biomedical research today is estimated to be wasted [[Glasziou 2014](#)]
 - In part, due to **incomplete or inaccurate reporting**
- ➡ **Reporting guidelines** (RGs): sets of recommendations that help authors properly report research methods and findings (e.g. CONSORT, PRISMA)
- Have RGs improved completeness of reporting?
 - Yes, for some RGs
 - But **current levels of adherence are suboptimal**: 86% of reviews assessing adherence to RGs concluded that it was poor or suboptimal [[Samaan 2013](#)]
- ➡ Further interventions to improve adherence to RGs have to be identified, implemented, and assessed

Relevant definitions

- **ADHERENCE**: Action taken by authors to ensure that a research report is compliant with the items recommended by the appropriate RG.
- **COMPLETE REPORTING**: Pertains to the state of reporting of a study report and whether it is compliant with the items recommended by the appropriate RG.

Scoping review objectives

- To **identify and classify interventions** to improve adherence to RGs described in the published and grey literature
 - ❖ Development of a typology of interventions to improve adherence to RGs
- To determine the **gaps in research** related to assessing the effect of interventions to improve adherence to RGs
 - ❖ To explore when and where future evaluations of interventions can be made

Scoping review methods

– Search strategy:

- Database search in PubMed, EMBASE, Cochrane Library
- Grey literature search

– Eligibility criteria:

- Studies evaluating interventions aiming to improve adherence to RGs
- Commentaries, editorials, letters, studies, and online sources describing other possible interventions that have been performed or suggested but never evaluated.

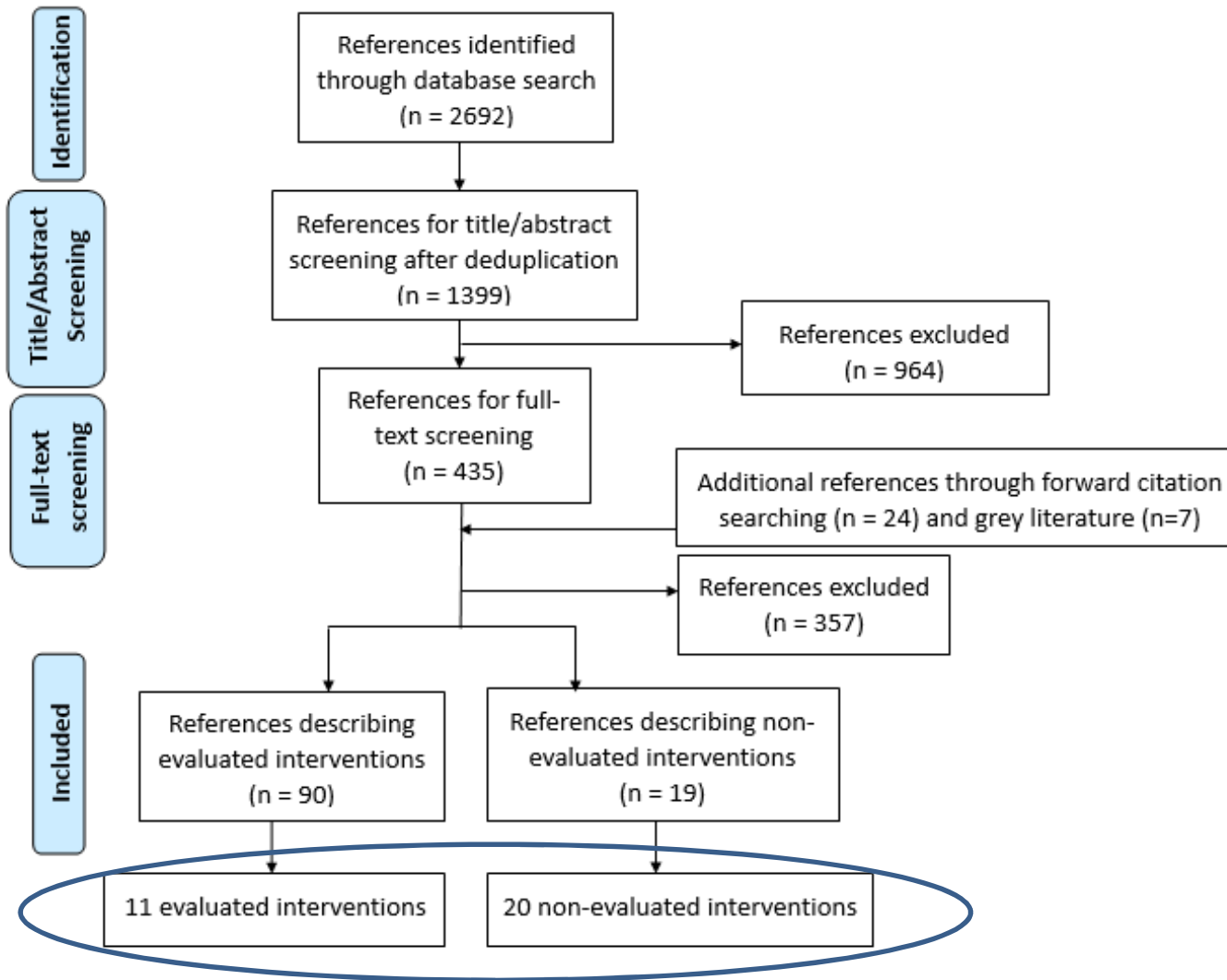
Scoping review methods

- Data extraction: In duplicate (independently)
 - Intervention **evaluated or non-evaluated**
 - **Theoretical background** of the intervention
 - **Research stage**: education, grant writing, protocol writing, manuscript writing, submission, journal peer review, author revision, copy-editing, and post-publication.
 - For evaluated interventions: **details** of the intervention, **study design** (e.g. RCT and before-after), **RGs considered** and **format** (checklist, bullet points and/or examples), **effect** of the intervention.

- Data synthesis: Categorization of the interventions
 - **Training**
 - Improved **understanding**
 - **Encouraging** adherence
 - **Monitoring** adherence and providing **feedback**
 - **Collaboration** among authors and experts

Scoping review results

PRISMA Flow diagram



Scoping review results

- **31 interventions** to improve adherence to RGs identified (11 eval. / 20 non-eval.)
 - “Training”: 4 of 31 interventions
 - “Improved understanding”: 2 of 31 interventions
 - “Encouraging adherence”: 15 of 31 interventions
 - “Monitoring adherence and providing feedback”: 8 interventions
 - “Collaboration among authors and experts”: 2 interventions
- ❖ Development of a typology of interventions

Scoping review results

Typology of interventions to improve adherence to reporting guidelines

❖ Here we restrict to those related to journal policies and peer review

TYPE OF INTERVENTION	TRAINING			Training for peer reviewers and editors on RGs by journals	
	Improved UNDERSTANDING				
	ENCOURAGING adherence	Author use of the writing aid tool COBWEB	Editorial statement endorsing certain RGs	Suggestion for peer reviewers to use RGs	
			Recommendation or requirement to follow RGs in the "Instructions to authors"		
		Author use of a structured approach for reporting research	Requirement to submit a RG checklist together with the manuscript indicating page numbers corresponding to each item		
	Author markup of the manuscript to indicate where each RG item is addressed	Journal development of core versions of RGs containing key items	Editor's questions to peer reviewers about whether the authors have followed RGs		
		Guidance to authors on manuscript preparation by publication officers			
		Requirement to populate and submit a RG checklist with text from the manuscript			
	MONITORING adherence and providing FEEDBACK			Completeness of reporting check by editors	Email to authors to revise the manuscript according to RGs
				Peer review against RGs	
			Internal peer review against RGs by a trained editorial assistant	Implementation of the tool WebCONSORT	
			Implementation of the automatic tool Statreviewer		
COLLABORATION among authors and experts	Statistician involvement				
	MANUSCRIPT WRITING	MANUSCRIPT SUBMISSION	JOURNAL PEER REVIEW	AUTHOR REVISION	
	RESEARCH STAGE				

IN BOLD: Evaluated interventions

Scoping review results

Evaluated interventions

- 11 evaluated actions found in 90 references
 - **86 of 90 observational studies** (before-after, cross sectional)

Significant effect for:

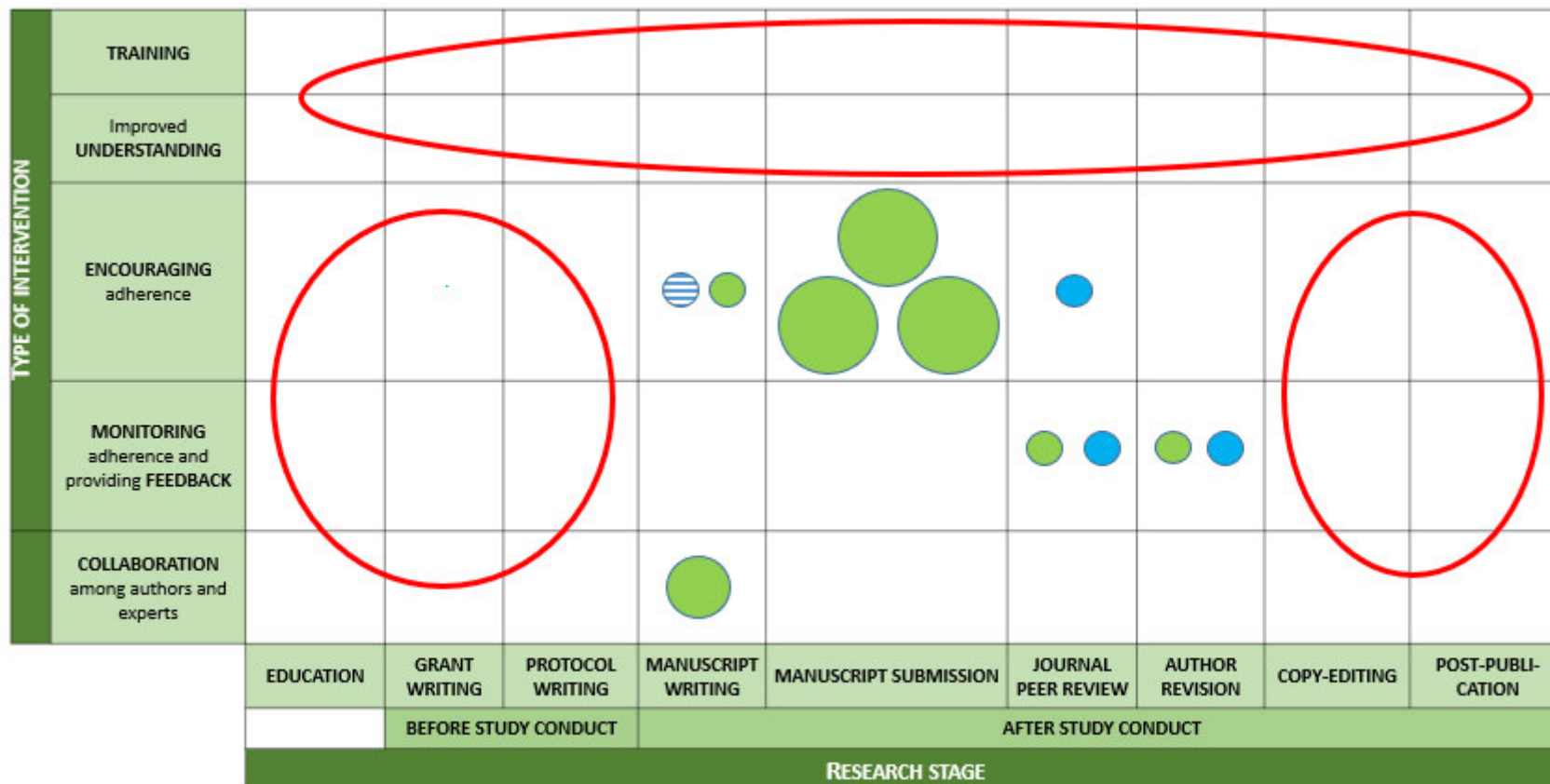
1. Author use of a structured approach to report research [[Riveros 2013](#)]
 2. Journal endorsement of RGs (slightly significant for CONSORT but not for other RGs) [[Turner 2012](#), [Stevens 2014](#)]
 3. Completeness of reporting check by the editor [[Pandis 2014](#)]
 4. Emails to authors to revise the manuscript according to RGs [[Hopewell 2012](#)]
- **4 of 90 RCTs** [[Cobo 2007](#), [Cobo 2011](#), [Barnes 2015](#), [Hopewell 2016](#)]

Significant effect for:

1. Author use of a writing aid tool (COBWEB) [[Barnes 2015](#)]
2. Peer review against RGs [[Cobo 2011](#)]

Scoping review results

Gaps in research on evaluating interventions to improve adherence to RGs



Legend

- 1) Circle size: **Number of studies** evaluating each intervention
- 2) Circle colour: **Study design** (Blue: RCTs; Green: Observational studies)
- 3) Circle fill: **Kind of RG implementation** (Plain: checklist; stripes: bullet points and examples)

Gaps in research

1. Training and improved understanding
2. Early stages of research or after the process of author revision of the manuscript

Discussion

- **Journals:** Great efforts to improve adherence to RGs – although they should certainly do more
 - **Implementation of RGs through the editorial process is warranted:** journal endorsement of RGs without implementation is not having the desired effect
- **Other stakeholders** should take responsibility (medical schools, research funders, universities and other research institutions)
 - This scoping review provides a wide range of strategies
- Improving adherence: probably not depending only isolated actions, but **sets of interventions** performed
 - By **different stakeholders**
 - At **different stages of research**

Discussion

- **High level of evidence** should be required
 - **Only 4 randomised trials** ever assessed interventions (the other 86 references were observational studies)
 - ✓ Future **randomised trials should assess further interventions** (considering research gaps identified)
- **Wider implementation of effective interventions**
 - Peer review against RGs [[Cobo 2011](#)]
 - Completeness of reporting check by trained editors [[Pandis 2014](#)]
 - Use of writing aid tools for authors such as COBWEB [[Barnes 2015](#)]
- **Contemporary publication culture** may undermine the potential effect of these interventions
 - Most scientists feel that primary evaluation tool of their research is the quantity rather than its quality [[Tijdink 2016](#)]

Future research

Project 2: To explore editors' and authors' perceptions on

- **Barriers and facilitators** associated with implementing in real editorial context a subset of the interventions identified in the scoping review
- **Further ideas** to improve adherence to RGs
 - ❖ Methods: Online qualitative survey

Project 3: To **implement and assess** an intervention in collaboration with BMJ Publishing Group

- ❖ Methods: **RCT**