

How to Write a Paper

Introduction

Global MECOR Course
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Background

- Scientific papers are a highly stylised form of English.
- They are, at first sight, a counterintuitive way to communicate.
- Even the English find it hard to follow the conventions at first.

Current convention for reporting scientific results:

- Introduction
- Methods
- Results
- Discussion
- References
- Supplementary Material

Inadequate reports undermine the value of the results

- The reporting of methods in the 408 identified papers was generally poor, with basic information about recruitment of participants often absent..... Poor reporting threatens the validity of reported results and reduces the generalisability of studies.
- *Lee et al. **Bias in psychiatric case-control studies: a literature survey.** Br J Psychiatry 2007*
- *Quoted by D Altman on the EQUATOR website*

Inadequate reports undermine the value of the results

- The biggest problem was the quality of reporting, which did not allow us to judge the important methodological items Data reporting was poor. 15 trials met the inclusion criteria for this review but only 4 could be included as data were impossible to use in the other 11.
- *Quoted by D Altman on the EQUATOR website from the Cochrane Library*

published in December 2000

from: *Chan and Altman. Lancet 2005; 365:1159-62*

Method for <i>concealment of allocation</i> not described to prevent the individual enrolling trial participants from knowing or predicting the allocation sequence	82%
<i>Random method for allocation</i> of participants to study groups not described	79%
<i>Power calculation</i> not stated to have been undertaken	73%
<i>Losses to follow-up</i> not enumerated for all study groups, or randomised patients with available data not reported as having been analysed in their assigned groups	66%
<i>Blinding of trial</i> not stated to be blinded, or single-blind/double-blind/triple-blind	60%
<i>Primary or main outcomes</i> not defined explicitly, or as an outcome used in power calculation	55%

Some published guidelines

Guideline	Subject	Reference
CONSORT	Randomised Controlled Trials	(Many)
TREND	Non-randomised evaluations of behavioural and public health interventions	Am J Pub Hlth 2004; 94 361-6
STROBE	Observational studies	Epidemiology 2007; 18: 805-35
ORION	Outbreak reports and interventions for nosocomial infections	Lancet (Infection) 2007; 7: 282-8
PRISMA	Systematic reviews and meta-analyses	PLOS medicine 2009; 6 (7) 1-28
SQUIRE	Quality Improvement studies	BMJ 2009; 338: 402-4

Getting started

- Selecting a Journal
- Making a draft

Selecting a Journal

- Which Journal's readership will be most interested in your findings?
- Is this going to be of interest to:
 - All medical researchers?
 - All medical professionals?
 - All doctors?
 - All respiratory physicians?
 - All respiratory physicians in low/middle income countries?
 - All TB doctors in Kenya?

Selecting a Journal

- High Impact factors are good (more widely read and more often quoted immediately)
- But be realistic about your audience
- If at first you don't succeed send it elsewhere – even Nobel prize winners get rejections.

Selecting a Journal

- Check the Journal website and their particular requirements.
- Although there is increasing uniformity between journals, there are still important differences in what the editors want
- Giving the editor what he wants improves your chances.

Making a Draft

- Good papers have:
 - Good Content
 - **Good Shape**
 - Good Style

Making a Draft

- Development of the current convention for reporting scientific results:
 - Title
 - Abstract
 - Introduction
 - Methods
 - Including ethics statement
 - Results
 - Discussion
 - Acknowledgements – including funding
 - References

Making a Draft

- **Step 1** make a plan:
 - Introduction: 3 sentences
 - Methods: List main methods
 - Results: 4 sentences; 4 tables
 - Discussion: 6 sentences
- This will help to keep things focused
- It will make the main message clear to you

Making a Draft

- **Step 2**: complete the first draft and then:
 - Check Journal checklist
 - Reduce word count by 20-30%
 - Send to co-authors

Making a Draft

- **Step 3**: review and polish further:
 - Send back penultimate draft to co-authors
- **Step 4**: Polish final version for Journal: recheck Journal requirements
- **Step 5**: submit.

Introduction

- **Purposes:**
 - To give the necessary background information needed to understand the paper
 - To explain to the non-specialist why the topic is of interest

Components of the Introduction

- Moves from the general to the specific:
 - **The Background:** what is already known
 - **The Problem:** what is not known
 - **The Question:** the specific hypothesis/
question that is the subject of this paper
 - **What was compared/assessed**

Common problems with the Introduction (1)

- Assumption the reader has more interest or knowledge in the subject than they have.
- The introduction needs to “sell” the question to the reader as interesting and worthwhile.

Common problems with the Introduction (2)

- Lack of focus: this should **not** include:
 - Methods
 - Results
 - Discussion

Common problems with the Introduction (3)

- Too long/too many references:
 - This is **not** a literature review.
 - Long involved introductions lose the interest of both the general and specialist reader.
 - The introduction should be 250-300 words long.
 - There should be 5-10 references (maximum).

Common problems with the Introduction (4)

- Use of the “retrospectroscope”:
 - You should not reinvent the starting point of the research in the light of the results.
 - If you changed your hypothesis in the light of the results, this belongs in the Discussion.

Which tense to use in the Introduction?

- Present tense for general findings:
 - *“Asthma is commonly found in patients with allergic rhinitis.”*
- Past tense for specific findings:
 - *“Vollmer and colleagues found a higher prevalence of....”*
- Past tense for what you planned to do in this study:
 - *“We studied skin prick responses to five allergens in”*