Authorship: rights and responsibilities

14.01.2016
Bernard Burnand
Bernard Burnand - Disclosure

- Salaried by Lausanne University Hospital
- Affiliated with Lausanne University
- Member of scientific and professional associations
- Partner of Cochrane
- Author / co-author of publications
Itinerary

• Introduction - Authorship
• Who is an author?
• Responsibilities
  – Researcher
  – Author
• Publications guidelines
Why authorship is important

Authorship implications in medical research

• Acknowledgement of competence and contributions
• Academic career
• Financial implications
  – Position
  – Grants
• Social recognition

(www.icmje.org - adapted)
Authors: who contributes?

Sometimes the declared authors

• have not participated in the design of the study
• had no access to the raw data
• had little to do with the interpretation of the data
• instead the sponsors of the study (a pharmaceutical company, a government department) have designed the study and analysed and interpreted the data
• the declared authors might not have ultimate control over whether their studies are published
• the decision to publish (or not) may rest with the funders of the research, which could mean that results unfavourable to the funders are suppressed

Smith R, Editor, BMJ (ICMJE editors) BMJ 2001;323:588
CASE NUMBER:
15-17

CASE TEXT (ANONYMISED)

Our journal was contacted by an individual, Dr H, who had recently seen a published article and was surprised that he was not listed as an author because it utilised samples from a database that he established. (The article was published online in November 2014 and in print in February 2015.) He stated that the cohort has spawned many projects, but he was not involved in the “specialist area” in this article. However, he believes he should have been listed as an author because the article would not have been possible without his database.

We told him that the journal conforms strictly to ICMJE’s policy on authorship and asked him for more information on his contributions. Although it appears that he fulfils the first criteria because of his involvement in the original cohort/database, he did not fulfil the other three criteria.

At this point we contacted the corresponding author of the article for more information. The corresponding author said that Dr H contributed substantially to the development of the cohort, but was not involved in the design, evaluation or preparation of the data, and recommended publishing a correction with Dr H listed in a simple acknowledgment (not as an author).

Dr H was not satisfied with this solution, continuing to believe that he should be listed as an author. At this point we...
Increase glucose lowering treatments RCT publications over time and prolific authors

Holleyman F et al. BMJ 2015;351:bmj.h2638

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Increase glucose lowering treatments RCT publications over time and prolific authors

• 3782 articles from 13 592 authors
• Top 110 authors: 1127 articles (32.4%)
• Top 10 authors: 397 articles (10.5%)
• 48 / 110 authors employed by pharmaceutical companies
• Most (91%) of RCT commercially sponsored

Holleman F et al. BMJ 2015;351:bmj.h2638
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Prolific author / Productive Researcher

Peter Higgs, 2013 Nobel Laureate (Physics) described himself as an “embarrassment“ to his Edinburgh University department because he published so little:

“Today, I wouldn’t get an academic job. It’s as simple as that. I don’t think I would be regarded as productive enough.”

Inflation in number of authors

• Single author publications in NEJM
  – 1928 : 78%
  – 1968 : 3%
  – (Diamond D. NEJM 1969;280:1484)

• Study type, country, author number
• Journals:
  Radiology, Am J Roentgen, Eur Radiol
• 682 articles
  (572 original research, 110 reviews)
• Overall number of authors per article:
  3.6 (1980) – 7.3 (2013) – original research
Inflation in number of authors

- Increased complexity in research
  vs
- Increased pressure to publish

To examine if year of publication is an independent determinant of author number, considering type of design, topic, study size, geographical location, significance of results

- Random samples of
  - 633 RCT from 7 large Cochrane reviews
  - 313 non RCT studies from 6 large published meta-analyses
  - 310 single case reports from PubMed

Inflation in number of authors

Determinants of the number of authors were:

• topic
• journal impact factor
• multinational authorship
• geographic location
• for RCT - article length and sample size
• for case reports
  - only geographic location and article length
• After adjusting for topic and other determinants, the number of authors increased by 0.8 per decade (P<0.001)

Increased co-first authorships in manuscripts in (A) biomedical journals and (B) clinical journals

Marisa L. Conte et al.
FASEB J 2013;27:3902

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Who is an author?

The ICMJE is a small working group of general medical journal editors whose participants meet annually and fund their own work on the Recommendations for the Conduct, Reporting, Editing and Publication of Scholarly Work in Medical Journals.

http://icmje.org
ICMJE authorship recommendations

1) Substantial contributions to
   a) conception or design, or
   b) acquisition, analysis or interpretation of data; AND

2) Drafting the article, or revising it critically for important intellectual content; AND

3) Final approval of the version to be published; AND

4) Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved
ICMJE authorship recommendations

Authors should:

1) be accountable for own contributions
2) be able to identify which co-authors are responsible for specific other parts of the work
3) be confident in the integrity in the contributions of their co-authors
4) have participated sufficiently in the work to take public responsibility for the work
ICMJE authorship recommendations

- Acquisition of funding, collection of data, writing, technical, or language editing, providing and caring for study patients, or general supervision of the research group, alone, does not justify authorship.
- All persons designated as authors should qualify for authorship, and all those who qualify should be listed.
- Research partners who do no meet all four criteria should be acknowledged.
- Investigators are responsible for identifying who is an author / potential author.
Contributorship

- **Contributors** are listed with details of who did what in planning, conducting, and reporting the work
- One or more of these contributors are listed as guarantors of the paper
  - The **guarantor** accepts full responsibility for the work and/or the conduct of the study, and the accuracy of the data analysis, had access to the data, and controlled the decision to publish

http://www.bmj.com  authorship – contributorship
Contributorship - Example

Research *Maternal use of oral contraceptives and risk of birth defects in Denmark: prospective, nationwide cohort study*

- *BMJ 2016;352:h6712*
- Brittany M Charlton, instructor
- Ditte Mølgaard-Nielsen, researcher
- Henrik Svanström, statistician
- Jan Wohlfahrt, chief statistician
- Björn Pasternak, research fellow
- Mads Melbye, professor
Contributorship - Example

Contributors:

- BMC and MM were responsible for study concept and design
- BMC and HS analysed the data
- BMC wrote the manuscript while all authors critically reviewed the manuscript and approved the final version
- All authors also had full access to all of the data (including statistical reports and tables) in the study and can take responsibility for the integrity of the data and the accuracy of the data analysis
- BMC acts as guarantor of the study
Contributorship - Example

Competing interests:

• All authors have completed the ICMJE uniform disclosure form at www.icmje.org/coi_disclosure.pdf (available on request from the corresponding author) and declare:
  
• support from the Harvard T H Chan School of Public Health, Eunice Kennedy Shriver National Institute of Child Health and Human Development, and

• The National Cancer Institute for the submitted work;

• No financial relationships with any organisations that might have an interest in the submitted work in the previous three years;

• No other relationships or activities that could appear to have influenced the submitted work.
Order of authorship

• No universal rules
• Variations across countries, institutions, disciplines, number of authors
• First author
  • Investigator in charge of conducting the study and the analyses
  • Investigator who has written the manuscript
• Last author
  • Principal investigator, guarantor, senior author
Order of authorship

THE AUTHOR LIST: GIVING CREDIT WHERE CREDIT IS DUE

The first author
Senior grad student on the project. Made the figures.

The second author
Grad student in the lab that has nothing to do with this project, but was included because he/she hung around the group meetings (usually for the food).

The second-to-last author
Ambitious assistant professor or post-doc who instigated the paper.

The third author
First year student who actually did the experiments, performed the analysis and wrote the whole paper. Thinks being third author is “fair”.

The middle authors
Author names nobody really reads. Reserved for undergrads and technical staff.

The last author
The head honcho. Hasn’t even read the paper but, hey, he got the funding, and his famous name will get the paper accepted.

Authors: collective / group name

- ICMJE
  - Group name
  - Names of authors / collaborators
    - KAPUT / KAPUT writing group
    - A Juste, B Arn Eyse, GR Uyer
      for/on behalf of KAPUT
- Journal’s recommendations
Honorary & ghost authorship

- Confidential inquiry to corresponding authors of articles published in 2008 in 6 majors journals
- Online questionnaire, 30 questions
- 2297 research, review & editorial articles
- Random stratified sample: 896
- Overall response rate: 70.3% (630)

Wislar JS et al. BMJ 2011;343:d6128
Prevalence of honorary & ghost authorship in 2008 in research articles of 6 journals

<table>
<thead>
<tr>
<th>Journal</th>
<th>Honorary authors</th>
<th>Ghost authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ann Intern Med</td>
<td>23.1</td>
<td>7.7</td>
</tr>
<tr>
<td>JAMA</td>
<td>24.1</td>
<td>14.3</td>
</tr>
<tr>
<td>Lancet</td>
<td>16.7</td>
<td>13.3</td>
</tr>
<tr>
<td>Nature Med</td>
<td>40.7</td>
<td>3.8</td>
</tr>
<tr>
<td>NEJM</td>
<td>24.1</td>
<td>15.0</td>
</tr>
<tr>
<td>PLoS Med</td>
<td>32.0</td>
<td>10.7</td>
</tr>
<tr>
<td><strong>Total - % (95% CI)</strong></td>
<td><strong>25.0 (19.7-31.1) (n=220)</strong></td>
<td><strong>11.9 (8.3-16.9) (n=226)</strong></td>
</tr>
</tbody>
</table>

Wislar JS et al. BMJ 2011;343:d6128
Prevalence of honorary & ghost authorship in 2008 in research articles of 6 journals

Honorary or ghost authorship

• 2008: 21.0% (95%CI 18.0 – 24.3%)

• 1996: 29.2% (95%CI 26.1 – 32.4%)

• P=0.0004 – chi²

Wislar JS et al. BMJ 2011;343:d6128
Elements of publications ethics

• Redundant publication
  – Two or more close papers, without full cross reference

• Plagiarism
  – From the unreferenced use of others’ published and unpublished ideas, including research grant applications
  – Occurs at any stage of planning, research, writing, or publication
Responsibilities as a research author

- Proper training for research
- Research question / priority topic
- Rationale of the study / systematic review
- Methods: design, analytic plan, preparation
- Trial registration, detailed protocol
- Rigorous study conduct and analysis
- Reporting results: writing skills, full and detailed reporting (guidelines), data availability
Waste at four stages of research

1. Questions relevant to clinicians & patients?
   - Low priority questions addressed
   - Important outcomes not assessed
   - Clinicians and patients not involved in setting research agendas

2. Appropriate design and methods?
   - Over 50% studies designed without reference to systematic reviews of existing evidence
   - Over 50% of studies fail to take adequate steps to reduce biases, e.g. unconcealed treatment allocation

3. Accessible full publication?
   - Over 50% of studies never published in full
   - Biased under-reporting of studies with disappointing results

4. Unbiased and usable report?
   - Over 30% of trial interventions not sufficiently described
   - Over 50% of planned study outcomes not reported
   - Most new research not interpreted in the context of systematic assessment of other relevant evidence

85% Research waste = over $100 Billion / year

Chalmers I, Glasziou P Lancet 2009
Reporting of study methods (1): interventions

• Assessed descriptions of treatments in 80 published articles: 55 randomised trials & 25 systematic reviews published in *Evidence-Based Medicine*

• In 41 articles essential elements of interventions were missing

• Only 3 / 25 systematic reviews provided intervention description sufficient for implementation

Glasziou P BMJ 2008
Reporting of study methods (2): trial methodology

• 519 randomised trials published in Dec 2000 & indexed in PubMed

• **Failure** to report key aspects of trial conduct:
  – 73% Sample size calculation
  – 55% Defined primary outcome(s)
  – 60% Whether blinded or not
  – 79% Method of random sequence generation
  – 82% Method of allocation concealment

Chan & Altman Lancet 2005
Reporting of other study types

• Most evidence on reporting problems is from randomised trials
• But similar concerns apply to other types of studies:
  – Observational studies (e.g. case-control / cohort / cross-sectional studies)
  – Diagnostic accuracy studies
  – Prognostic studies
  – Qualitative studies
  – Systematic reviews
  – etc.
What are reporting guidelines?

- Established by international collaborative groups incl. researchers and editors

- RG specify a minimum set of items required for a clear and transparent account of what was done and what was found in a study

- Usually checklist, flow diagram, explicit text

- They focus on issues that might introduce bias into health research

- Should be based on evidence if available. If not, consensus opinion.
Key aspects of reporting guidelines

- **Guidance** - not requirements
  - Some journals enforce adherence of RGs, most only recommend their use
- Helpful for authors, editors, reviewers and readers
- **Not** about methodological quality

- Adherence to RGs does not guarantee a high-quality study but more transparency about study conduct
## Reporting guidelines initiatives

<table>
<thead>
<tr>
<th>Year</th>
<th>Initiative</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>CONSORT</td>
<td>RCTs (revised 2001 &amp; 2010)</td>
</tr>
<tr>
<td>2000</td>
<td>MOOSE</td>
<td>Meta-analyses of obs. studies</td>
</tr>
<tr>
<td>2003</td>
<td>STARD</td>
<td>Diagnostic studies</td>
</tr>
<tr>
<td>2004</td>
<td>TREND</td>
<td>Non-randomised studies</td>
</tr>
<tr>
<td>2007</td>
<td>STROBE</td>
<td>Case-control / Cross-sectional / Cohort studies</td>
</tr>
<tr>
<td>2007</td>
<td>COREQ</td>
<td>Qualitative studies</td>
</tr>
<tr>
<td>2008</td>
<td>SQUIRE</td>
<td>Quality improvement studies</td>
</tr>
<tr>
<td>2009</td>
<td>PRISMA</td>
<td>Syst. reviews &amp; meta-analyses (replacing QUOROM)</td>
</tr>
<tr>
<td>2013</td>
<td>SPIRIT</td>
<td>Protocols of RCTs</td>
</tr>
</tbody>
</table>

See: EQUATOR Library for Health Research Reporting
### Table 1 | CONSORT 2010 checklist of information to include when reporting a randomised trial*

<table>
<thead>
<tr>
<th>Section/Topic</th>
<th>Item No</th>
<th>Checklist item</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Title and abstract</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1a</td>
<td>Identification as a randomised trial in the title</td>
</tr>
<tr>
<td></td>
<td>1b</td>
<td>Structured summary of trial design, methods, results, and conclusions (for specific guidance see CONSORT for abstracts[5 6])</td>
</tr>
<tr>
<td><strong>Introduction</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Background and objectives</td>
<td>2a</td>
<td>Scientific background and explanation of rationale</td>
</tr>
<tr>
<td></td>
<td>2b</td>
<td>Specific objectives or hypotheses</td>
</tr>
<tr>
<td><strong>Methods</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trial design</td>
<td>3a</td>
<td>Description of trial design (such as parallel, factorial) including allocation ratio</td>
</tr>
<tr>
<td></td>
<td>3b</td>
<td>Important changes to methods after trial commencement (such as eligibility criteria), with reasons</td>
</tr>
<tr>
<td>Participants</td>
<td>4a</td>
<td>Eligibility criteria for participants</td>
</tr>
<tr>
<td></td>
<td>4b</td>
<td>Settings and locations where the data were collected</td>
</tr>
<tr>
<td>Interventions</td>
<td>5</td>
<td>The interventions for each group with sufficient details to allow replication, including how and when they were actually administered</td>
</tr>
<tr>
<td>Outcomes</td>
<td>6a</td>
<td>Completely defined pre-specified primary and secondary outcome measures, including how and when they were assessed</td>
</tr>
<tr>
<td></td>
<td>6b</td>
<td>Any changes to trial outcomes after the trial commenced, with reasons</td>
</tr>
<tr>
<td>Sample size</td>
<td>7a</td>
<td>How sample size was determined</td>
</tr>
<tr>
<td></td>
<td>7b</td>
<td>When applicable, explanation of any interim analyses and stopping guidelines</td>
</tr>
<tr>
<td>Randomisation:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sequence generation</td>
<td>8a</td>
<td>Method used to generate the random allocation sequence</td>
</tr>
<tr>
<td></td>
<td>8b</td>
<td>Type of randomisation; details of any restriction (such as blocking and block size)</td>
</tr>
<tr>
<td>Allocation concealment mechanism</td>
<td>9</td>
<td>Method used to implement the random allocation sequence (such as sequentially numbered containers), describing any steps taken to conceal the sequence until interventions were assigned</td>
</tr>
<tr>
<td>Implementation</td>
<td>10</td>
<td>Who generated the random allocation sequence, who enrolled participants, and who assigned participants to interventions</td>
</tr>
<tr>
<td>Blinding</td>
<td>11a</td>
<td>If done, who was blinded after assignment to interventions (for example, participants, care providers, those assessing outcomes) and how</td>
</tr>
<tr>
<td></td>
<td>11b</td>
<td>If irrelevant, description of the similarity of interventions</td>
</tr>
</tbody>
</table>
Fig 1 | Flow diagram of the progress through the phases of a parallel randomised trial of two groups (that is, enrolment, intervention allocation, follow-up, and data analysis)\textsuperscript{52-54}
STROBE Statement

www.strobe-statement.org

• “Strengthening the Reporting of Observational Studies in Epidemiology”

• Set of 22 essential items that are essential for reporting of
  – cohort studies,
  – case-control studies
  – cross-sectional studies

• Published in 2007 in several journals

• Comprehensive explanatory paper with examples of good reporting
Good reporting of research is not an optional extra. It is an essential component of good research.
EQUATOR

• EQUATOR Network
  – international initiative
  – to enhance reliability and value of medical research literature
  – promoting transparent and accurate reporting of research studies
  – comprehensive lists of the available reporting guidelines

www.equator-network.org
Summary
« a proper research author »

- Appropriate research skills and practice
- Communication and early discussion about authorship in research team
- Writing skills, reporting guidelines
- Authorship recommendations (ICMJE)
- Detailed list of contributions
- Declared potential conflicts of interest

- Appropriate and balanced institutions’ incentives for publication
References

• Committee on Publication Ethics (COPE), « Code of conduct », and other resources (http://publicationethics.org)
• International Committee of Medical Journal Editors, « Ethical Considerations ». (http://www.icmje.org)
• www.equator-network.org
References

• Hall GM. How to write a paper. 4th edition (BMJ book – Blackwell publication, 2009)
• Vandenbroucke JP. J Clin Epi 2009 (Editorial)
• « Writing Tips Series » Kotz D & Cals JWL, J Clin Epi 2013-14
Merci – Thank you

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