

SOLUTIONS TO WASTE IN BIOMEDICAL PUBLISHING: INTRODUCING THE PUBLICATIONS OFFICER

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Declaration of Conflicts of Interest

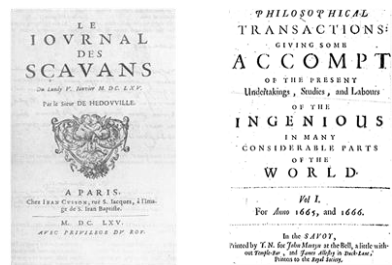
- No conflicts of interest
- Member of EQUATOR Canada
- Affiliated with the University of Stirling, Scotland

Outline

- History of biomedical publishing
 - The current state of biomedical publishing
 - Evidence of poor reporting
 - Consequences of poor reporting
- Publications officer role
 - Why hire a publications officer?
 - What does a publications officer do?
 - Why should you care?
- Resources and opportunities to improve your publications
- Conclusions/Questions

(Short) History of Publishing

1665



(Short) History of Publishing

Peer-reviewed journal growth 1990-2013



The current state of biomedical publishing

Reporting is not being done well.

1. Publication bias and non-reporting:

- Of 79 studies presented at a scientific meeting only 53% were subsequently published after nine years (Scherer et al., 2007)
- 1/3 completed clinical trials of patients undergoing surgery remain unpublished ~5 years after study completion (Chapman et al., 2014)
- Not specific to a particular field

The current state of biomedical publishing

2. Incomplete reporting:

- 41/ 80 studies (RCTs & SRs) published in Evidence Based Medicine had usable information missing about the intervention (Glasziou et al. 2008)
- Only 11% of 262 RCTs in prominent oncology journals contained 10 essential elements about interventions (e.g. route, premedication) (Duff et al. 2010)
- Discrepancies between registry entries and published articles for primary and non-primary outcomes are very prevalent; 39% omitted their primary outcome (Fleming et al., 2015)
- A cross-sectional analysis of all interventional clinical trials registered on ClinicalTrials.gov as of 25 October 2012, showed that 28229 of 89204 (31.7%) registered studies had their primary outcome changed after the listed study start and completion dates (Ramagopalan et al., 2015)

The current state of biomedical publishing

3. Incomplete methods/results reporting

- Only 11/62 trials described sample size calculations completely and consistently in both their protocol and publication; amendments were rarely acknowledged (Chen et al., 2008)
- Selective (significance) or incorrect reporting of results: 'Spin' (Boutron et al., 2010)

Consequences of poor reporting

1. Publication bias and non-reporting
2. Incomplete reporting
3. Incomplete methods/results reporting

Researcher

Clinician

Patient

Consequences of poor reporting

Research

"Risk of bias assessment was hampered by poor reporting of trial methods."
[Meuffels et al. Computer assisted surgery for knee ligament reconstruction, CDSR 2011]

"Poor reporting of interventions impeded replication"
[Gordon and Findlay. Educational interventions to improve handover in health care: a systematic review. Med Educ 2011]

"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."
[Nofte et al. Amphetamines for schizophrenia. CDSR 2004]

"Poor reporting of data meant that individual effect size could not be calculated for any of these studies."
Bleakley et al. Some conservative strategies are effective when added to controlled mobilisation with external support after acute ankle sprain: a systematic review. Aust J Physiother 2008.

Slide obtained from Doug Altman The Equator Network

Consequences of poor reporting

Research

"My name is on an article in which there is some data that has been left out. That, to me, crosses a line" Denis Daneman

Article 3 Comments

Drug company accused of altering study by top sickle-cell pediatrician

Dr. Charles Fitzpatrick, a local pediatrician, co-authored a study that allegedly demonstrated the value of drug used to treat sickle-cell disease.



Copyright © 2014, Charles Fitzpatrick. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or by any information storage or retrieval system, without the prior written permission of Charles Fitzpatrick.

Moher, D. Along with the privilege of authorship come important responsibilities. 2014. BMC Medicine, 12: 214.

Consequences of poor reporting

Clinician

1. Publication bias and non-reporting:
 -No knowledge exchange, not translated to clinical practice

2.&3. Incomplete reporting/Incomplete methods/results reporting and 'spin'
 -Basic information is not described for readers

Patient harm: changes in clinical practice implemented from poorly reported RCTs
 Exaggeration of effects

Consequences of poor reporting

Patient

"A young woman, just making ends meet and coping with four children, **signed up to a breast cancer study** where she would have to take two big pills every day for two years and show up for numerous frequent tests.

Why would she put herself through that, wondered the researcher who went to obtain her consent.

"I'm doing it for my daughter" said the mother, clearly expecting the study to yield usable, meaningful, and accessible evidence that might help prevent breast cancer in young women.

Would she have consented so readily if she knew that some studies are never published and that many are reported so poorly that they are barely read and never used?"

Davina Ghersi, WHO, 2008

Non-reporting + Poor reporting + Problematic methods
= Waste!!

- How much money is spent on biomedical research annually?

200 Billion Dollars



Are we getting a return on our investment?
85% of money spent is wasted!

(Chalmers and Glasziou, 2009; Macleod et al., 2014)

Lancet: Series, Conference, Campaign



REWARD / EQUATOR Conference 2015 Edinburgh, UK
28-30 September 2015

the guardian
The first imperative: Science that isn't transparent isn't science

The Economist
What's gone's larger article
How to do a nuclear deal with Iran
Investment tips from Nobel economist
Bank bonds are back
The meaning of Sirisha Tenkhalak

THE NEW YORK TIMES
SCIENCE
Science, Now Under Scrutiny Itself
By BENEDICT LANEY JULY 9, 2014

HOW SCIENCE GOES WRONG

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Why hire a publications officer?

- We've been publishing since 1665 and yet...
- 1) We are missing the mark when it comes to publishing
 - We are not publishing fit-for-purpose useable studies that are assessable to researchers or clinicians
- 2) We are not trained
 - Providing education and support to researchers about how to publish in a responsible and valuable way



Why hire a publications officer?

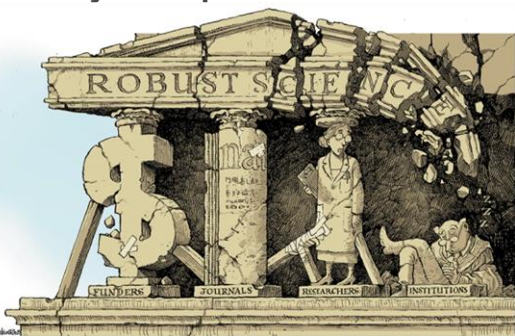


Illustration by David Parkinson

What does a publications officer do?

- **Publications Officers:** provide support at the back end of research



- Promote and facilitate the use of reporting guidelines
- Educate personnel on publication models, including the variety of open access formats
- Assist researchers with other aspects of the journal submission process
- Facilitate regular rounds presentations to educate on topics related to journalology
- Meet one-on-one to discuss publication topics

What does a publications officer do?

- **Preparing a manuscript for publication**
 - Reporting guidelines and writing tools
 - Authorship advice (disputes)
 - Internal peer-review
- **Deciding where to submit**
 - Open access
 - Predatory journals
 - Journal metrics
- **Responding to reviewer comments**
- **After publication**
 - Copyright agreements
 - Science media communication
 - Metrics and altmetrics
- **Research integrity**

Why should you care?



These are not only student issues.

Image: statistically-funny.blogspot.com

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Resources and opportunities to improve your publications

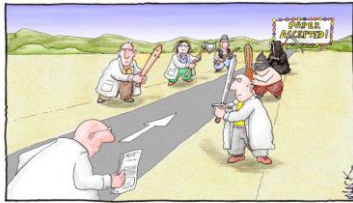
- Conclusions/Questions

Resources and opportunities to improve your publications

- 1) Centre for Journalology Webpage
- 2) Open Access at uOttawa
- 3) EQUATOR Network

1) Centre for Journalology Webpage

- 1. Links (reporting guidelines, blogs, publication tools)
- 2. Templates (Submission letter, review response letter)



Most scientists regarded the new streamlined peer-review process as 'quite an improvement.'

Image: Nick of <http://www.lab-jinilo.com>

1) Centre for Journalology Webpage

- 3. Pre-submission network (Coming soon!)
 - Register to submit and to review (circular system)

Submissions:

- < 1 month review
- Transparency review
- Content review

Reviews:

- Learning resources
- Structured format (quick and easy!), closed or open system

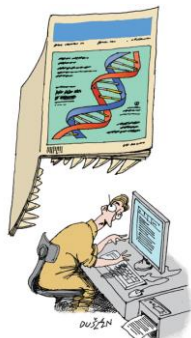
<http://www.ohri.ca/journalology/>

2) Open Access at uOttawa

- uOttawa repository
- <https://www.ruor.uottawa.ca/>
- Tri-agency requirement for open access
- Free (manuscripts, protocols); indexed
- uOttawa is a member of the Canadian Research Knowledge Network (CRKN), making it eligible for open access discounts.
- Please identify yourself as being affiliated to the University of Ottawa in order to qualify for the discounts
- e.g., SAGE
 - Authors affiliated with uOttawa can receive a 40% discount on article processing charges of SAGE journals.

2) Open Access at uOttawa

- Predatory Journals/Publishers
- Beall's (black) List:
 - <http://scholarlyoa.com/>
- DOAJ (Directory of Open Access Journals):
 - <https://doaj.org/>



<ul style="list-style-type: none"> Advanced Science Index African Quality Centre for Journals American Standards for Journals and Research (ASJR) CiteFactor Cosmos Impact Factor Directory of Indexing and Impact Factor (DIIF) Directory of Journal Quality Factor Einstein Institute for Scientific Information (EISI) Eurasian Scientific Journal Index (ESJI) General Impact Factor Global Impact Factor Impact Factor Services for International Journals (IFSJ.I.J) IndexCopernicus Infobase Index Institute for Science Information (ISI) International Impact Factor Services International Institute for Research International Institute of Organized Research (I2OR) International Journal Impact Factor (IJIF) 	<ul style="list-style-type: none"> International Scientific Indexing (ISI) International Scientific Institute (ISI) International Services for Impact Factor and CiteFactor (ISFI) International Society for Research Activity (ISRA) Journal Impact Factor (JIF) Jour Informatics Journal Impact Factor Journals Impact Factor (JIFACTOR) Journal Influence Factor Journals Consortium Journal Influence Factor (JIF) JPR Impact Factor Open Academic Journals Index Pubicon Science Index Science Impact Factor Scientific Indexing Services (SIS) Scientific Journal Impact Factor SCJOURNAL.ORG (International Scientific Institute) Technical Impact Factor Universal Impact Factor
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Predatory Journals/Publishers

3) EQUATOR Network

- Searchable library of reporting guidelines available via the EQUATOR Network (>250 reporting guidelines)
- (Enhancing the **QUALITY** and **Transparency** Of health Research: www.equator-network.org)

3) EQUATOR Network

- Hosts reporting guidelines
- Reporting Guidelines: Explicit text to guide authors in reporting a specific type of research
 - Focus on scientific content
- Using explicit methods via a consensus process (e.g., considers journal editors, methodologists and content experts)
- A minimum set of items that need to be addressed when reporting a study

Moher D, Schulz KF, Simera I, Altman DG. Guidance for developers of health research reporting guidelines. *PLoS Medicine*, 2010; 7(2):e1000217.

STARD checklist for reporting of studies of diagnostic accuracy

Section and Topic:	Item #	On page #
TITLE/ABSTRACT/KEYWORDS	1	
INTRODUCTION	2	
METHODS		
Participants	3	
	4	
	5	
	6	
Test methods	7	
	8	
	9	
	10	
	11	
Statistical methods	12	
	13	

Can a checklist solve all of the waste?

- Initial studies suggest reporting guidelines lead to improvements:
 - **STARD**: Smidt et al. 2006; Korevaar et al. 2015
 - **CONSORT**: Turner et al. 2012
 - **STRICTA and CONSORT**: Prady et al. 2008
 - **PRISMA**: Stevens et al. 2014; Tunis et al. 2013; Panic et al., 2013
- **Simple**: 19-item surgical safety checklist to improve consistency of care reduced death rate from 1.5% to 0.8% (Haynes et al. 2009)
- Used in many professions and practices
- Creates a minimum set of items for authors, but also for peer reviewers and editors for critical appraisal

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Conclusion

- To begin to report completely and transparently may create some increased load for researchers.
 - Change will involve critical re-evaluation of existing processes
 - The burden of irreproducible research is greater
 - Moral responsibilities of authors (Moher, 2007; Can J Anaesth)
- 'Even if it is accompanied by an apparent decrease in productivity, the resulting increase in research quality will be well worth the costs.' (Beagley et al., 2015; Robust research: Institutions must do their part for reproducibility; Nature)
- Publications officer role here to help facilitate the maximum quality papers possible – part of an evolving process

Thank-you for listening.

- Many thanks to:
 - Dr. David Moher
 - Dr. James Galipeau
 - Larissa Shamseer
 - Dr. Marc Avey

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