



Qualitative synthesis of prepublication peer review of journal manuscripts

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Where peer review processes differ? (hint: everywhere)

Triage

Open vs blind vs post

Novelty vs methodology

No of reviewers

Specialty reviewers

Ratings of reviewers

Suggest/ban reviewers

Summing up the reports

Publication history

Rejection rates

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Existing systematic reviews on peer review

2007 Cochrane (28) Little evidence to support the use of editorial peer review as a mechanism to ensure quality of biomedical research

2010 PLoS One (48): A Multilevel Meta-Analysis of Inter-Rater Reliability studies - mean ICC/r² = .34, mean Cohen's Kappa = .17)

2012 HAND (37): A systematic review of peer review for scientific manuscripts. Ethics of peer review, different versions of peer review, criteria that peer reviewers are looking for when they analyze manuscripts

2015 J Clin Epidemiol (18): little to no effect of the intervention(s) of training of peer reviewers. However, small number of studies, not able to draw any meaningful conclusions from the results.

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PEERE Objective

Systematic reviews on:

- Motivation for peer review
- Satisfaction with peer review
- **Qualitative studies on peer review**

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Morse JM:

qualitative methods are used:

“when little is known about a topic, when the research context is poorly understood, when the boundaries of the domain are ill defined, when the phenomenon is not quantifiable, when the nature of the problem is murky, or when the investigator suspects that the status quo is poorly conceived and the topic needs to be re-examined”

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Brief overview of qualitative research

Methods:

- Participant observation
- In-depth interviews
- Focus groups
- Text/discourse analysis

Designs:

- Ethnography
- Grounded theory
- Phenomenology

Why use qualitative research:

- New/emergent topics
- "Lived experience"
- Meanings and motives under the numbers
- Develop hypotheses for further quantitative testing ("mixed methods")

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Search Strategy

- 1 exp "Peer Review"/ (13225)
- 2 Peer Review, Health Care/ (1338)
- 3 1 not 2 (11887)
- 4 (peer\$ adj5 review\$).tw. (17983)
- 5 ((manuscript\$ or journal\$ or editor\$) adj5 review\$).tw. (11663)
- 6 3 or 4 or 5 (32776)
- 7 "Surveys and Questionnaires"/ (333628)
- 8 exp Qualitative Research/ (25420)
- 9 Focus Groups/ (19275)
- 10 Grounded Theory/ (162)
- 11 Interview/ (26547)
- 12 Interviews as Topic/ (45597)
- 13 Narration/ (5807)
- 14 Nursing Methodology Research/ (15804)
- 15 Observation/ (5083)
- 16 Self Report/ (13076)
- 17 Tape Recording/ (4141)

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- 18 ((open or thematic or selective or axial) adj cod\$.tw. (815)
- 19 ((conversation\$ or content\$ or semiotic\$ or thematic\$ or discours\$ or discours\$) adj5 analy\$.tw. (48929)
- 20 (participant\$ adj5 observ\$.tw. (8715)
- 21 ("field work" or "key informant" or audio record\$ or audiorecord\$ or case stud\$ or cluster sampl\$ or colaizzi\$ or constant compar\$ or cooperative inquir\$ or data saturat\$ or digital\$ record\$ or emic\$ or ethnograph\$ or ethnolog\$ or ethnon\$ or etic\$ or existential\$ or experience\$ or field note\$ or field stud\$ or fieldwork\$ or focus group\$ or giorgi\$ or glaser\$ or grounded theor\$ or heidegger\$ or hermeneutic\$ or husserl\$ or interview\$ or mixed method\$ or narrative\$ or natural\$ or observ\$ or phenomenolog\$ or post structural\$ or postmodern\$ or purposive sampl\$ or qualitative or questionnaire\$ or strauss\$ or structured categor\$ or tape record\$ or taperecord\$ or theme\$ or theoretical sampl\$ or unstructured categor\$ or van kaam\$ or van manen\$.tw. (4316227)
- 22 or/7-21 (4477160)
- 23 6 and 22 **(7152)**

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Initial results

First round of screening of 7152 titles/abstracts

257 – related to peer review

137 – had no abstract

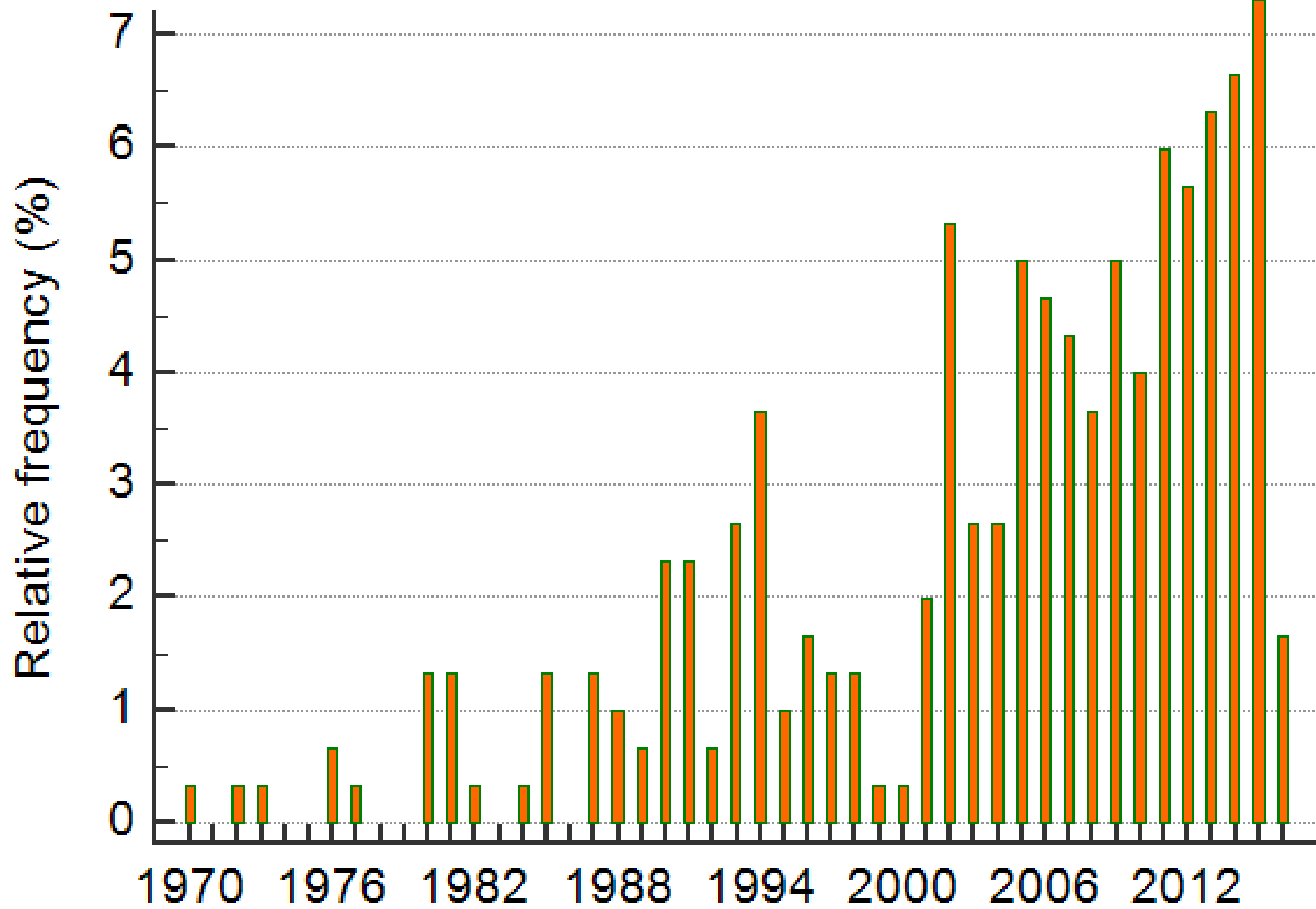
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Selected peer review publications in MEDLINE Year



Selected studies

- 12 – qualitative studies
- 82 – could be included in qualitative synthesis
- 30 – how to review
- rest – grant/case studies

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QUALITATIVE SYNTHESIS

aggregate and/or integrate and/or interpret findings from a sample of qualitative research reports

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1998 – 15 reviewers were asked to describe their experiences

- *manuscript reviewing brings both extrinsic and intrinsic rewards*
- *a price must be paid in terms of time spent and frustrations*
- *skepticism among reviewers about the value of the peer review process*

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2001 – Research in *Medical Education* conference proceedings: 151 review reports

- *inappropriate or incomplete statistics*
- *overinterpretation of results*
- *sample too small or biased*
- *text difficult to follow*
- *inaccurate or inconsistent data reported*
- *incomplete, inaccurate, or outdated review of the literature*

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2002 – *Annals of Internal Medicine*: 193 reviewer reports

- 99-item taxonomy of reviewer comments organized in 8 categories
- *Special methodology* reviewers emphasized methodology issues that were distinct from those raised by regular reviewers

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- Presentation of methods
- Other comments (non-methodology/statistical)
- Presentation of results
- Hypothesis/purpose/theoretic model
- Research and analytic methods
- Study design/power
- Statistical methods
- Interpretation of results/limitations

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2002 – Critical appraisal of comments on 3 clinical trials published in *Lancet*

more than half post publication comments were unanswered by authors

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2007 – What do the *JAMA* editors say when they discuss manuscripts that they are considering for publication

three themes

- Science (method)
- Journalism (importance)
- Writing

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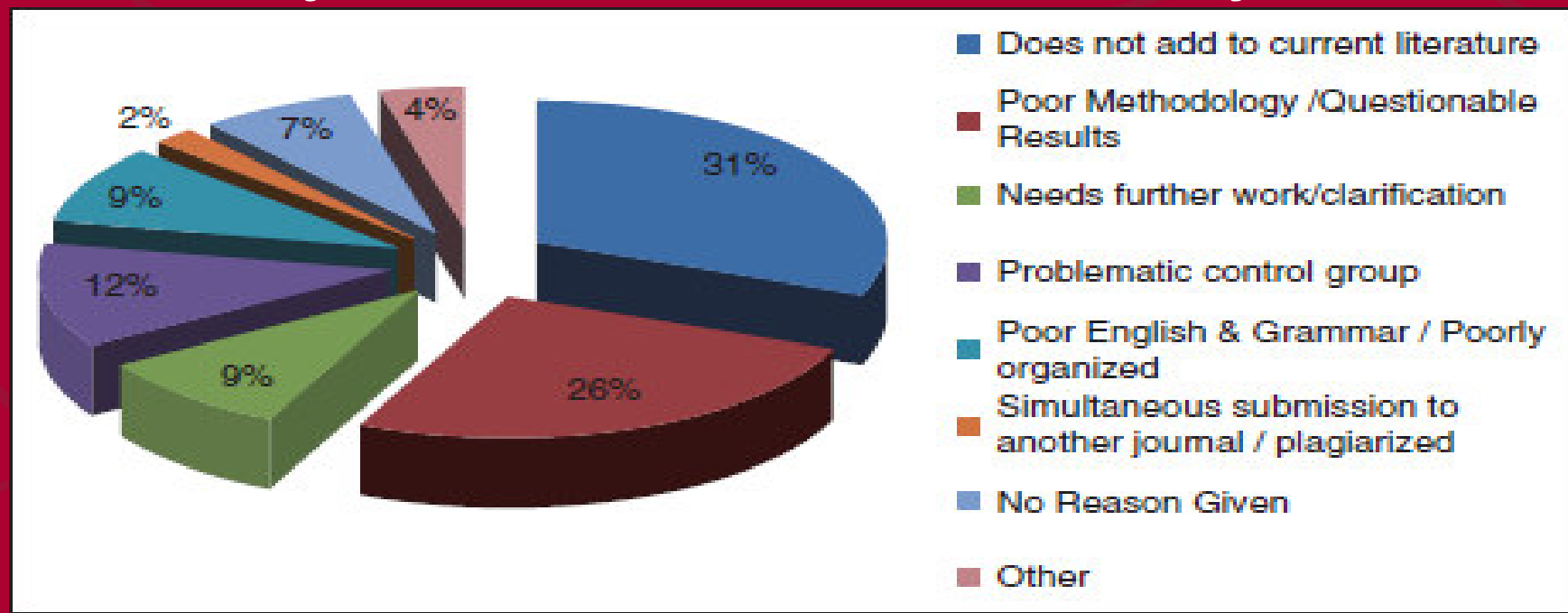
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2009 – *Clinical and Experimental Ophthalmology*: 662 rejection letters – content analysis



Wyness T, McGhee CNJ, Patel DV. Manuscript rejection in ophthalmology and visual science journals: identifying and avoiding the common pitfalls. Clin Experiment Ophthalmol. 2009 Dec;37(9):864-7.

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2011 – 21 statistical reviewers were asked to describe the most common stat. mistakes

- problems with research design and reporting
- inappropriate data analysis
- misinterpretation of results

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2011 – Open-ended interviews with 35 journal editors, and peer reviewers in the UK, USA and Australia

Social and subjective dimensions of biomedical manuscript review should be made more explicit, accommodated and even encouraged, not only because these dimensions of human relationships and judgements are unavoidable, but because their explicit presence is likely to enrich, rather than threaten the manuscript review process.

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One possible explanation for this disappointing outcome (improving manuscript quality) is that almost all published empirical research into biomedical manuscript review thus far has been quantitative, consisting mostly of surveys of stakeholder opinions and preferences. While these quantitative studies have led to some important insights, it is also possible that they have limited our ability to understand, and manage, manuscript review as a complex whole and that other approaches, such as qualitative research, are required.

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**2011 – 30 participants (focus groups/online):
open questions**

Benefits of peer review:

find errors, improve language elements,
constructive criticism, second eyes, identify
related work, fact checking, comments and
suggestions

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2013 – 42 reviewer reports from 8 biomedical journals

- improper review of literature, provision of insufficient detailed methodology, unsystematic
- or illogical presentation of results, and unsupported conclusions

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2015 – Descriptive content analysis of reviewer comments made on manuscripts on drug trials submitted to 8 medical journals

- Fewer shortcomings in industry-related trials, but more comments on lack of novelty
- Negative trial results did not significantly influence the nature of comments
- Manuscript acceptance was primarily related to the research questions and methodological robustness

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2016 – focus groups: Dutch scientists and PhD students

resentment and envy could negatively influence the quality of scientific studies, compromise peer review and frustrate collaboration.

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12 studies

- 4x Interviews with reviewers about reviewing
- 1x focus group
- 3x content analysis of reviewer comments
- Analysis of post-publication comments and authors responses to them
- Content analysis of rejection letters
- Discourse analysis of editorial board meetings
- Interviews with statistical editors

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Fun findings

PEER REVIEW: **Fetishes, Fallacies, and Perceptions**

SNAPPY ANSWERS TO STUPID QUESTIONS: an evidence-based framework for responding to peer-review feedback.

We developed a **Scale of Silliness (SOS)** and a **Scale of Belligerence (SOB)** to facilitate the assessment of inadequate peer-review feedback

The reviewer made an error that is so egregious or offensive that it alone should preclude the journal from ever sending other papers to this particular reviewer

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Mentions of Open Peer Review (OPR) in scholarly literature date back to Michael McGiffert's 1988 article, "Is Justice Blind? An Inquiry into Peer Review", in which McGiffert argues, based on survey results, that editors should protect the identity of authors, but that editors, "...should leave referees free to decide for themselves whether or not to make themselves known [to the author]" (p. 47, McGiffert, 1988).

Perhaps the oldest implementation of OPR occurred at *Atmospheric Chemistry and Physics* with its launch in 2001.

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Next Steps

- Scopus -7599 studies to screen
- WoS (SCI-EXPANDED, SSCI, A&HCI) - 7822
- Data extraction
- Synthesis
- Create a database for PEERE with all papers on peer review – determine trends

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PEERE Considerations/Ideas

- grey literature/more databases
- How to review papers – synthesis?
- Preference – open vs blind
- How many times has Churchill been quoted for peer review: *“Peer review is the worst way to assess the value of work— except for all the alternatives”*

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THANK YOU!



PEERE Training school on peer review

15-17 May 2018

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