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Letter to the Editor

Using a checklist to improve the quality of research reporting

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Why publish

Accurate, timely and comprehensive publication of research is essential for individual and global scientific and philosophical growth.[1] Regoniel[2] suggested five reasons to publish research, these being to: add to the body of knowledge; become recognized as an expert in the field; assist in developing or improving on existing policy; advance careers; and gain personal satisfaction. Other authors have suggested that publication of scientific research encourages exploration of new findings, development, and testing of new methods, and sharing information.[3,4,5]

How papers are handled

Scientific papers submitted to peer-reviewed journals are reviewed by independent academics who are required to declare any conflict of interest, and who bring to the review process their expertise in the content, and/or the methods.[6] Most reviewers approach the task positively, with the intention of assisting authors to produce research output of value to themselves and their profession. Having a paper accepted for publication in a scientific journal is usually exciting, no matter how experienced the authors are in scientific writing and publishing.[4] Acceptance for publication means that independent reviewers have determined that the research reported in the paper adds to the body of scientific knowledge, and to the credibility of the journal. However, writing a scientific paper requires significant effort which can challenge even the most experienced of writers.[3] However the review process is often frustrating, and less than satisfying for authors and reviewers alike, when the research is poorly conceptualized or conducted, and when papers are poorly reported.

The publication journey

Submitting a scientific article to a peer-reviewed journal is just the start of the journey, as steering a paper to publication is often not smooth sailing. Papers can be rejected outright by a journal editor before they even get to review.[5] Moreover, after an independent review has been completed, papers might be rejected, or reviewers may request major revisions.[3] Often these revisions require significant rewriting of the paper, re-analysis of the data, or even a refocus of the research being reported. Inexperienced authors will often question the value of their scientific endeavor at this point, and many do not complete the revisions as it often seems all too hard. Consequently, proper preparation of the first version of the article is essential to ensure that there are no 'holes' in the science, or in the reporting.

There are many freely-available guides to writing scientific papers, as well as books and articles on the subject. For instance, Elsevier recently published a 2019 update of a 2014 note by an

experienced editor on tips to prepare a paper that will not be rejected out of hand by journal editors.[7] This blog deals with identifying and telling the story embedded in the data, and structuring the paper in a logical manner so that all data is reported in the right place and order.

Reporting checklists

In the last five years, an excellent support has been produced for authors and reviewers alike. This is a compilation of checklists to guide comprehensive and accurate reporting of a range of primary and secondary research designs. This resource is the EQUATOR Network (EQUATOR being the acronym for Enhancing the QUAlity and Transparency Of health Research) accessible at http://www.equator-network.org/.[8] The EQUATOR Network is hosted by the Centre for Statistics in Medicine, the University of Oxford as 'an international initiative that seeks to improve the reliability and value of published health research literature by promoting transparent and accurate reporting and wider use of robust reporting guidelines.'[8] The resources offered on the EQUATOR Network website are freely available and bring together the work of research groups around the world which have developed reporting checklists for different types of research. The EQUATOR Network checklists and reporting guides are summarised below.

1. EQUATOR hosts reporting checklists for secondary evidence:
    - clinical practice guidelines (AGREE[9] or RIGHT[10]); and
    - systematic review protocol development (PRISMA-P[11]); and
    - systematic review and meta-analyses conduct and reporting (PRISMA[12]).
2. The Network also provides supports for the conduct and reporting of primary studies:
    - Randomised Controlled Trials (CONSORT[13]) including study protocols (SPIRIT[14]);
    - Epidemiological studies (STROBE[15]);
    - Diagnostic studies (STARD[16] or TRIPOD[17]);
    - Economic evaluations (CHEERS[18]);
    - Case studies (CARE[19]);
    - Quality Improvement Studies (SQUIRE[20]); and
    - Qualitative studies (SRQR[21] or COREQ[22]).

There is also a reporting framework for pre-clinical animal studies (ARRIVE)23 as well as the TIDIER checklist[24] which was designed to describe the elements of interventions applied in primary intervention studies. The EQUATOR Network is regularly updated with revised or new checklists, and thus it is an important go-to resource for authors, reviewers, and educators.

How to use these reporting standards

These checklists are designed to assist researchers to conduct their studies appropriately and then to report them comprehensively. The checklists also provide reviewers with a simple and efficient way of reviewing content and reporting in papers that they have agreed to review for a scientific journal. The checklists also offer supports for educators when teaching students about research (and when encouraging them to critically appraise articles in clinical areas). Whilst the checklists are not intended for critical appraisal per se, they offer a simple way for (especially novice) researchers to determine if a paper reports everything it should, in the expected manner. Students and young researchers who become familiar with the checklists in the EQUATOR Network are well placed to conduct better quality research themselves because they understand the important elements that make research publishable. Using a checklist in the early design phase of a study is a sensible approach for any researcher (no matter how experienced). It is common, in the midst of everything that is required when undertaking a study, to overlook important details (such as justifying sample size, or recruitment methods, or describing interventions appropriately) when designing a study. A relevant EQUATOR Network reporting checklist can help to keep things on track.

Submitting to the PJAHS

It is recommended that researchers submitting a paper to the PJAHS include, as an appendix, a

completed checklist from the EQUATOR Network, relevant to the study design. Whilst this might seem tedious, it may also make the difference between having to undertake a major revision after the paper has been assessed at peer-review and making minor changes only. Putting the completed checklist as an appendix alerts the editor and the reviewers to your commitment to quality reporting, as the completed checklist should identify on what line on what page you have complied with each reporting element. The suggestion is that in the Methods section of your paper, you include a heading such as 'Reporting Standards (or Checklist)' and after this, you make a statement such as 'This paper complies with the requirements of the xxx reporting checklist (reference). Evidence of how the paper complies is found in Appendix xxx'. PJAHS is a new journal attempting to set publishing standards for allied health research conducted not only in the Philippines, but in other Asian countries. The use of an appropriate reporting standard for all papers submitted to, and published in, this journal will assist it to quickly raise its profile as a quality scientific vehicle committed to publishing good quality, defensible research.

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