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Title

An abstract lesson: Adopting the CONSORT-EA to improve the quality of reporting of emergency medicine research

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Authors

Weber, Ellen J
Body, Richard

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Germini *et al* have reported their findings of the quality of abstracts of randomized trials in ten emergency medicine journals.¹ They studied two periods (2005 to 2007 and 2014 to 2015), before and after the publication of the CONSORT statement extension for abstracts (CONSORT-EA). They found that the overall quality of abstracts reported in emergency medicine journals was low in both periods, with only slight and non-statistically significant improvement in the total number of correctly reported items after the publication of the CONSORT-EA guidelines.

The CONSORT statement, for those who are not primarily researchers, was developed in 1996 and was the first of what are now hundreds of guidelines for how to report the methods, results and implications of research. The idea behind these guidelines is to promote complete transparency in how studies are conducted, and to alert readers to potential sources of bias (systematic error) in how the study was conceived or conducted. They usually take the form of a checklist and the most commonly used checklists in the emergency medicine literature are those for observational studies (STROBE), diagnostic studies (STARD), systematic reviews (PRISMA) and qualitative studies (QUADRA). A database of all 287 (as of this writing!) can be found at the Equator Network website.

Many journals, including the EMJ, require that authors include the relevant research checklist when they submit their study, indicating where in the paper various reporting requirements have been met. The goal of this is not so much so the journal editors can find the information, but to provide a structure for the authors so that reporting is complete. Moreover, we find that papers that adhere to these checklists are easier to read and to review.

While the checklists help to ensure that the full study is appropriately reported, it is a well known fact that many readers (including ourselves) will only read the study's abstract before moving on to the next article. It's understandable – we have limited time, and papers may not seem to be relevant to us (at least until our next shift!) So it was quite wise of the CONSORT authors to also develop a standard for specifically for the abstracts (Figure).

Unfortunately, what we've learned from the study by Germini *et al* is that guidelines for these abstracts are not routinely followed. As a result, readers who don't get beyond the abstract may not get the full picture of how the study was done. As recently demonstrated in our two-part series on detecting bias in diagnostic studies, the methods are critical to determining whether you can actually rely on this study in your practice.^{2,3}

While Germini *et al* only looked at a portion of RCTs that have been published in our specialty, their data makes it clear that emergency journals have failed to exercise their editorial responsibility to make sure that abstracts conform to the requirements of the CONSORT statement. The authors suggest that this may be worse than in other fields, citing a study of abstracts published in general medicine. But clearly we are not alone. Similar assessments done for journals in Anaesthesia and Critical Care, for example all show that despite some improvements in the reporting of specific items, overall there remains poor compliance with the CONSORT abstract guidelines in these fields as well.^{4,5}

Nevertheless there have been some small improvements, although most were not statistically significant. An important and significant improvement was in trial registration. Trial registration helps to ensure

that, even when studies don't come out the way authors (or their funders) want, they are visible. This can help prevent publication bias in which only "positive" studies are actually published. Having this reported in the abstract suggests that journals themselves, such as the EMJ, are requiring prospective registration of trials. Importantly, only 4 of the RCTs reported the funding source in the abstract, which was an improvement from 0 in the past, but clearly needs to be improved to make sure that any potential sources of bias are transparent.

What are the lessons to draw from this article? Obviously, journals must do a better job. EMJ has taken this study on board and will require that authors of randomized trials submit not only a CONSORT checklist but the abstract checklist as well, and write their abstract in conformance with these guidelines.

We encourage readers to become familiar with the CONSORT abstract requirements as well. They are not as daunting as the two-page, 8-font checklists required for the entire manuscript, yet they squarely alert you to the key points you should be using to assess the quality of an RCT. While you may not have time to read the full paper for every study, you will at least know whether what you've read is giving you the full picture. If it is incomplete, read on. If you don't have the time or inclination, be very wary about applying the work to your practice or citing it to others.

Finally, all investigators - whether seasoned or new to research - should take advantage of the research checklists as a guide to designing and performing research, not just when it comes to submitting the paper. The real value of these checklists is if they are used in the planning stages of the study, as a way to make sure you've considered that you have chosen a representative sample of patients,

you have the correct sample size, that you have considered all the data you need to collect, how you will handle any missing data, and how you will analyse your results. Then, by following the guidelines for a well-written abstract, you are more likely to find your article passing through the initial editorial screening on to external review.

- ¹ Germini F, Marcucci M, Dedele M et al. Quality of reporting in abstracts of RCTs published in emergency medicine journals; a systematic survey of the literature shows we can do better. 2019 *Emergency Medicine Journal* 2019 XXXXX
- ² Hall MK, Kea B, Wang R. Recognising Bias in Studies of Diagnostic Tests Part 1: Patient Selection
Emergency Medicine Journal 2019;**36**:431-434.
- ³ Kea B, Hall MK, Wang R. Recognising bias in studies of diagnostic tests part 2: interpreting and verifying the index test. *Emergency Medicine Journal* 2019;**36**:501-505.
- ⁴ Can OS, Yilmaz AA, Hasdogan M, Alkaya F, Turhan SC, Can MF, Alanoglu Z. Has the quality of abstracts for randomised controlled trials improved since the release of Consolidated Standards of Reporting Trial guideline for abstract reporting? A survey of four high-profile anaesthesia journals. *Eur J Anaesthesiol.* 2011;28:485-92.
- ⁵ Kuriyama A, Takahashi N, Nakayama T. Reporting of critical care trial abstracts: a comparison before and after the announcement of CONSORT guideline for abstracts. *Trials.* 2017;18(1):32.