Quality of reporting in infertility journals

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Objective: To evaluate whether fertility and top gynecology journals indexed in PubMed require the use of reporting guidelines and to identify the percentage of randomized controlled trials (RCTs) published in 2013 that were written following CONSORT guidelines in the top four fertility journals (by their highest impact factor).
Design: Cross-sectional study evaluating instructions for authors and RCTs published in fertility journals.
Setting: Academic institution.
Patient(s): None.
Intervention(s): None.
Main Outcome Measure(s): Proportion of instruction-for-authors documents that suggested or required the use of reporting guidelines, and proportion of RCTs published in 2013 that accomplished the CONSORT checklist.
Result(s): In 47% (16/34) of the journals one or more reporting guidelines were mentioned in the instructions for authors' documents. PRISMA and CONSORT were the most commonly mentioned reporting guidelines. None of the analyzed RCTs completed the 25 items of CONSORT guideline. Sequence generation or allocation concealment was not described in 69% of the studies. One-third of the journals did not publish a flowchart, 72% did not show relative and absolute size-effect measures, and 42% did not use measures of imprecision. In the summaries, 42% did not discuss the limitations of the study and 78% did not mention the generalizability of the results.
Conclusion(s): Less than half of the analyzed peer-reviewed journals request the authors to use reporting guidelines. Nevertheless, among the top fertility and gynecology journals, reporting guidelines are widely mentioned. Overall, accomplishment of CONSORT items was suboptimal. Editorial boards, reviewers, and authors should join efforts to improve the quality of reporting. (Fertil Steril® 2015;103:236–41. ©2015 by American Society for Reproductive Medicine.)
Key Words: Reporting quality, reporting guidelines, fertility journals, randomized controlled trials

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Transparent and accurate reporting of research studies is crucial to enhance reliability and value of medical research (1). Reporting means to relate, tell, present, or describe the findings of the study. It is not only important to perform a study, with an appropriate design and analysis, but it is also important to convey to the readers that the authors followed accepted reporting guidelines in writing their articles. Studies should be properly described, so the readers may fully understand and interpret the results reported, as well as evaluate the internal and external validity. There is a responsibility involved in publishing a study, shared by the authors, the editorial board, and reviewers. When a published article is not fully or properly described, risk of misinterpretation may have a negative impact in clinical practice or future research (2). Furthermore, readers may disregard valuable research exclusively due to reporting problems.

Reporting guidelines are useful tools to write an article or when reporting a study. Reporting guidelines are geared toward reducing reporting bias and to describe step by step, how the research was performed. It also helps readers to judge the reliability of a study. These guidelines usually have checklists, flow diagrams, and texts that provide advice on how to report research studies (3). It is important to report consistently methods and findings of the research performed, and these guidelines provide an order, a format, and also show examples on

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how it was done. Some studies have evaluated the impact of using reporting guidelines and showed that the implementation of these guidelines increased the frequency of completely reported trials (4, 5).

Reporting guidelines are free and fully available through initiatives such as Equator (Enhancing QUAlity and Transparency Of health Research), a network that gathers and promotes most of those guidelines (6). Some of the most commonly used guidelines are: CONSORT, TREND, STARD, STROBE, PRISMA, COREQ, SQUIRE, REMARK, ENTREQ, and CHEERS (7–16).

Reporting guidelines should not only be used by authors, but should also be encouraged by editorial boards to enhance the quality of their own journals. Promoting the use of reporting guidelines could be encouraged under different strategies: [1] including them in the journal's instructions to authors (as suggested or required); [2] providing the authors with the checklist as a necessary step; and [3] encouraging the journal reviewers to use these guidelines to assess the evaluated studies before accepting them for publication (17).

At present, more than 1,300 journals follow the Recommendations for the Conduct, Reporting, Editing and Publication of Scholarly Work in Medical Journals of the International Committee of Medical Journal Editors (18). This organization suggests using reporting guidelines while preparing a manuscript for submission, and encourages journals to request authors to follow these guidelines.

Fertility journals are working diligently to improve the quality of the material accepted for publication. Recently, the leading fertility journals have published most randomized controlled trials (RCTs) with low risk of bias showing that authors and editors give relevance to methodological quality (19). However, the proportion of good quality designs was low, and that there is a need to keep working on improving the quality of publications in fertility journals. In 2006, Dias et al. (20) published a study that evaluated CONSORT in RCTs, and in 2009, Partsinevelou and Zintzaras (21) reported on quality of publications in polycystic ovary syndrome (PCOS). Despite these isolated efforts, a focused reporting quality evaluation among fertility journals is still missing.

Our primary objective was to assess whether the journals indexed in PubMed that publish fertility articles, suggest or require the use of reporting guidelines and how this is done. A second objective was to assess whether CONSORT guidelines were followed in the published RCTs, in 2013, among the leading four fertility journals and the major three gynecology journals, which may also publish fertility articles.

MATERIALS AND METHODS

This is a cross-sectional study and the specific STROBE statement was followed (10). During January 2014, we accessed the instructions-for-authors documents that were available at each website of all the journals that are indexed in PubMed, whose main topic was reproductive medicine or infertility. If more than one journal referred to the same instructions-for-authors document, it was analyzed only once. To locate those journals, we performed a search in PubMed using the following strategy: reproduct* OR fertility OR infertility (filters: currently indexed in MEDLINE). In addition, we searched in the three gynecology journals (*British Journal of Obstetrics and Gynaecology*, *American Journal of Obstetrics and Gynecology*, and *Obstetrics and Gynecology*) with the highest impact factor, which may also publish fertility articles (22). In each online instructions-for-authors document, we evaluated whether Equator Network and/or International Committee of Medical Journal Editors were mentioned, whether any registration for RCTs was required, and whether any of the following reporting guidelines were specifically required or suggested: CONSORT, PRISMA, and STROBE. To decrease the risk of bias, this part of the study was performed first by three investigators (A.C., C.B., and B.R.) and then evaluated by another investigator (D.G.).

After we performed a subgroup analysis. As was done in a previous publication (19), we selected the four fertility journals with the highest impact factor (IF), according to the 2013 impact factor (from the Institute for Scientific Information) and the H index (from SciMagO). The impact factor reflects the average number of citations of recent articles published in a particular journal, and could be used to estimate the importance of that journal (23, 24). We analyzed the top four fertility journals that usually publish clinical studies, and we added the evaluation of the three gynecology journals mentioned previously. In addition to the evaluation of the instructions-for-authors documents, on May 14, 2014, we performed a search in PubMed, identifying the potential RCTs (limits, type of article: RCT) published in 2013 by those journals, to analyze whether they followed each of the recommendations of the CONSORT guidelines. To determine the level of adherence to each item of the CONSORT, the most popular guideline, we identified all the actual RCTs whose main topic was infertility or reproductive medicine, analyzing each potential retrieved RCT by pairs of independent reviewers, evaluating the titles and abstracts of identified articles, according to prespecified criteria, using EROS software (25). As a second step, two reviewers (D.G., B.R., A.Co., C.B., and A.Ci.) randomly selected, extracted, and independently assessed each included study using the CONSORT checklist, analyzing how each RCT was reported. Discrepancies were resolved by consensus.

We used proportion and 95% confidence interval to describe each of the evaluated parameters. To test differences between proportions we used the χ^2 test with Fisher's exact test. For statistical analysis we used software STATA 11.2.

RESULTS

We found online instructions-for-authors documents in 34 of the 38 analyzed journals that publish fertility articles and were indexed in PubMed in January 2014. In 47% (16/34) of the journals, one or more reporting guidelines were mentioned in at least part of the author's instructions.

Considering all seven journals with high IF, all of them mentioned reporting guidelines. PRISMA (7 of 7) and CONSORT (6 of 7) were the most commonly mentioned reporting guidelines. In these journals, EQUATOR is specifically cited in *Human Reproduction* and *Reproductive Biomedicine Online*