Short running head:

Reporting guidelines in rheumatology

Full title of manuscript:

The use of reporting guidelines in rheumatology—a cross-sectional study in over 850 manuscripts published in five major rheumatology journals

Complete given names and surnames:

Aldo Barajas-Ochoa, ORCID: https://orcid.org/0000-0003-4510-0534

Antonio Cisneros-Barrios, ORCID: https://orcid.org/0000-0001-9309-6395

Manuel Ramirez-Trejo, ORCID: https://orcid.org/0000-0002-8418-3822

Cesar Ramos-Remus, ORCID: https://orcid.org/0000-0002-4898-4219

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Initials, surnames, appointments, and highest academic degrees and affiliated department and institution:

A. Barajas-Ochoa, MD. Division of Infectious Diseases, Department of Medicine, Virginia Commonwealth University. Richmond, VA 23298, United States. Email: aldouch5@gmail.com

A. Cisneros-Barrios, medical student. Centro Universitario de Ciencias de la Salud, Universidad de Guadalajara. Guadalajara, México. Email: jose.antonio.cisneros2530@gmail.com.

M. Ramirez-Trejo, medical student. Centro Universitario de Ciencias de la Salud, Universidad de Guadalajara. Guadalajara, México. Email: joss.rtrejo@gmail.com.

C. Ramos-Remus, MD, MSc. Head. Unidad de Investigación en Enfermedades Cronico-Degenerativas. Guadalajara, México. Email: ramosremus@gmail.com.

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The authors declare no conflicts of interest to declare

Corresponding author:

Cesar Ramos-Remus, M.D. MSc

Unidad de Investigación en Enfermedades Cronico-Degenerativas. Colomos 2292, Providencia. Guadalajara, Jal. 44620 México. Ph +52333 81600562. e-mail: ramosremus@gmail.com

Statement of ethics and consent:

This manuscript does not include clinical studies or patient data. Therefore, ethical approval and patient informed consent were not required.

Key Indexing Terms: rheumatology, action research, research design, cross-sectional studies, observational study, meta-analysis, bibliometrics.

Abstract:

Objective:

To assess whether 16 of the Enhancing the QUAlity and Transparency Of health Research (EQUATOR)-related reporting guidelines were used in rheumatology publications.

Methods:

This was a cross-sectional study of research articles published in five high-performance rheumatology-focused journals in 2019. All articles were 1) manually reviewed to assess whether the use of a reporting guideline could be advisable and 2) searched for the names and acronyms (e.g., CONSORT, STROBE) of 16 reporting guidelines. To calculate the “advisable use

rate," the number of articles for which a guideline was used was divided by the number of articles for which the guideline was advised. Descriptive statistics were used.

Results:

We reviewed 895 manuscripts across the five journals. The use of a guideline was deemed advisable for 693 (77%) articles. Reporting guidelines were used in 50 articles, representing 5.6% of total articles and 7.2% (95% CI: 5 to 9) of articles for which guidelines were advised.

The advisable use rate boundaries within which a guideline was applied by the journal were 0.03–0.10 for any guideline, 0–0.26 for CONSORT, 0.01–0.07 for STROBE, 0–0.8 for PRISMA, and 0–0.14 for ARRIVE. No identifiable trends in the variables studied were observed across the five journals.

Conclusions:

The limited use of reporting guidelines appears counterintuitive considering that guidelines are promoted by journals and are intended to help authors report relevant information. Whether this finding is attributable to issues with the diffusion, awareness, acceptance, or perceived usefulness of the guidelines remains to be clarified.

Introduction:

Publishing a manuscript involves several processes that range from drafting the research question to editing. The diverse stages of the editorial process begin with the author's manuscript submission to a journal and end with the editor's final decision to publish the report.

The research report or manuscript is of crucial importance because it represents the "product" of the research process upon which the decision to publish or reject the research is made. Effective report writing is not only limited to the correct use of language but also involves the accurate expression and sequencing of ideas using all pertinent information to ensure concepts are understood and ultimately used, replicated, and confirmed by others. The publication of research reports is not just about authors' career progress and other secondary benefits; its ultimate goal is to disseminate, share, and advance knowledge and "supply information that helps scientists develop new hypotheses, and provide a foundation on which new scientific discoveries and inventions are built" (1).

Concerns about the quality of research reporting have been expressed in the medical literature for decades and poor reporting standards are observed in numerous journals. Markedly, numerous research manuscripts with preventable deficiencies continue to be written and submitted (2, 3), with various consequences, such as peer review costs estimated at millions of dollars annually (3).

For over 25 years, various reporting guidelines have been developed as simple, structured tools to support writing research reports in the health sciences. Guidelines provide a list of the minimum information required to ensure that a manuscript can be reproduced by a researcher, used by a clinician to support a clinical decision, or included in a systematic review. Specific guidelines exist for most research designs. For example, STROBE, CONSORT, and PRISMA guidelines guide the development of observational study reports, clinical trials, and systematic reviews, respectively (Table 1) (4). The EQUATOR (Enhancing the QUAlity and Transparency Of health Research) network global initiative develops and promotes these and other reporting guidelines (4).

Publishers and several journals explicitly endorse the use of the guidelines cited above. Furthermore, empirical evidence supports that at least some manuscripts that followed these

guidelines showed improvement (5-8), although not in every case (9). Nevertheless, our recent experience with a highly selected sample of rejected manuscripts indicated that the use of reporting guidelines is atypical in rheumatology (2).

Overall, information regarding the use of reporting guidelines is scarce, outdated, and, to our knowledge, not available in the rheumatology field. In this exploratory study, we evaluated the frequency and characteristics of EQUATOR-related guideline use in research manuscripts published in 2019 in a sample of top-ranked rheumatology journals.

Materials and methods:

Study design and journal eligibility:

This study was performed between January and June 2022. It was a cross-sectional, audit-type study of original research manuscripts published in the journals´ printed volumes of a year (2019) considered typical before the pandemic. We decided to evaluate five journals based on our previous experience (2) that it would be feasible to assess 850 manuscripts manually and that each journal publishes about 170 articles per year. We used Scimago Journal and Country Rank (10) indicators for 2019 to select the journals based on the following criteria: they were primarily rheumatology-focused, within quartile 1, with the highest H-index and SJR rank, and having published at least 170 original articles (research manuscripts) that year as per Web of Science core collection (11).

We followed the STROBE guidelines for guidance on reporting (4).

Article selection:

The tables of contents of each journal volume were reviewed by examining the web pages for each journal. Titles of research articles were selected while remaining articles including editorials, reviews, and letters were excluded. Only the research articles were chosen because they are the ones in which the use of the reporting guidelines is evaluated. The full articles of

selected titles were then downloaded as PDF files using an institutional account. One of the authors (AB-O) then verified that each downloaded PDF file was a research article.

Assessment of the actual use of reporting guidelines:

Using the Adobe search tool, two authors (AC-B, MR-T) searched each PDF file for the words "guideline" and "reporting guideline," the acronyms EQUATOR, CONSORT, STROBE, PRISMA, MOOSE, SPIRIT, STARD, TRIPOD, CARE, STREGA, ARRIVE, RECORD, COREQ, AGREE, CHERRIES, CHEERS, and SQUIRE and their full names (e.g., Consolidated Trial Reporting Standards for CONSORT and Strengthening Reporting of Observational Studies in Epidemiology for STROBE; Table 1).

All files in which a searched term appeared were then manually reviewed by one of the authors (CR-R) to verify that a guideline was employed. For example, verification ensured that STROBE guidelines had been used by the author and did not merely appear in the references section annotating a supporting article or that “SPIRIT” referred to the guideline and not to the clinical trial of the same name. The utilization of a reporting guideline was confirmed if its use was expressed anywhere in the body of the article However, we did not assess the manuscript's levels of adherence to the guidelines.

Advisability assessment of reporting guidelines:

Reporting guidelines may not apply to all research articles. Examples of studies for which guidelines are not relevant include analyses of tissue samples, in vitro experiments, and mixed-design studies. For this reason, one of the authors (CR-R) manually reviewed PDFs to assess whether, in his opinion, the use of a reporting guideline was advisable and if so, to suggest the relevant guideline. The estimate of advisable use was after reading the study design and characteristics of an article and a possible match with a printed list with the names and definitions of the reporting guidelines. The “advisable use rate” was defined as the number of

articles per journal confirmed to have used a specific guideline divided by the number of articles per journal in which using the guideline was deemed advisable.

Ethical considerations

This manuscript does not include clinical studies or patient data. Therefore, ethical approval and patient informed consent were not required.

Statistical analysis

Given the study design and the low frequency of studied events, results were reported using only descriptive statistics. The differences among the journals included in the study precluded comparisons.

Results:

There were 16 journals within quartile 1, of which the following were selected: *Annals of the Rheumatic Diseases* (H index 257; Scimago Journal Rank -SJR- 6,142; articles 177); *Arthritis and Rheumatology* (H Index 328; SJR 4.113; articles 214); *Arthritis Care and Research* (H index 172; SJR 2057; articles 171); *Rheumatology* (H index 181; SJR 1897; articles 222), and the *Journal of Rheumatology* (H Index 186; SJR 1590; articles 190).

Of the 974 articles from the five journals reported as original by the Web of Sciences, we selected 895 (92%) as research articles after manual review. The use of a reporting guideline was deemed advisable for 693 (77%) articles. However, only 50 (5.6%) of total articles and 7.2% (95% CI: 5 to 9) of articles for which a guideline was deemed advisable used a reporting guideline (Table 2).

Table 2 reports the frequency distribution of the use of specific reporting guidelines and the advisability use rate by journal. Although the proportion of articles for which the use of reporting guidelines was deemed advisable ranged from 69% for *Annals of the Rheumatic Diseases* to 89% for *Arthritis Care and Research*, guideline use was low for all journals—with an advisable use rate ranging from 0.03 for *The Journal of Rheumatology* to 0.10 for *Arthritis Care and Research*. While the STROBE guideline was most commonly advised, the advisable use rate

for this guideline was 0.033 across the five journals. Used for reporting clinical trials, CONSORT guidelines had an advisable use rate of 0.17 while PRISMA and MOOSE guidelines scored 0.68 each across the five journals. ARRIVE, the guideline for reporting animal research findings, was used infrequently and STREGA, which is utilized to report genetic associations, was not used at all despite being recommended for the development of 37 articles.

We found no mentions of AGREE, CHERRIES, CHEERS, and SQUIRE guidelines or the EQUATOR network. We did not observe identifiable trends in the studied variables across the five journals, and the low value of each variable precluded the assessment of associations.

Discussion:

In this exploratory study, we observed that reporting guidelines were used in only a minority (one in 14) of research manuscripts that could have benefited from their use. This finding appears counterintuitive given reporting guidelines are intended to help authors provide all relevant information, are free to use, are easily accessible, and can be customized to study designs. Low usage rates were observed even in studies such as clinical trials (CONSORT) and animal research studies (ARRIVE) whose designs are subject to more stringent regulatory requirements. Furthermore, some guidelines such as CONSORT have been available for approximately 25 years while the EQUATOR network has been operational for 15 years. Additionally, the instructions for authors on the respective websites of *Annals of the Rheumatic Diseases*, *Arthritis & Rheumatology*, *Arthritis Care and Research*, *Rheumatology* and *The Journal of Rheumatology* explicitly endorse the use of above guidelines.

We have no explanation for the scarce use of the reporting guidelines. Errors in the registry would be unlikely since the acronyms or full names would appear in the text and the references list if they had been used. Another possibility could be that a reporting guideline was used, but its use was not mentioned in the article. It seems implausible since writing in the document that a guideline was used may give more robustness for peer review.

We did not identify information on the use of these guidelines in rheumatology-focused journals for potential comparison to our findings. However, in a report examining articles

published between 2010 and 2013 in seven public health journals, the authors remarked that 1.5% of publications included the words PRISMA, STROBE, or CONSORT (12). In a similar 2013 study of urogynecology publications, use of the PRISMA guidelines was found to be explicitly mentioned in 54% of systematic reviews, the CONSORT guidelines in 25% of clinical trial reports and the STROBE guidelines in 1.2% of observational studies (13). While differences between these findings and our results may be attributable to the temporality of the evaluations and varying methods and specialties, our conclusions are similar: reporting guidelines have been and continue to be used infrequently in all the settings in which their use has been evaluated.

The assessment of each manuscript for the advisability of using a reporting guideline reinforced our findings; this study dimension provided context for the number of manuscripts for which guidelines were actually utilized and the specific guidelines used. Nevertheless, several study limitations must be considered. First, although we included all 2019 research publications from two European-based and three North American-based journals, the sample was not random and therefore did not necessarily represent the universe of rheumatology publications or all journals within this specialty. Second, the study's exploratory, cross-sectional design and the low values of the studied variables precluded causality assumptions or inferences. Third, although the "advisable use" designation was assigned by an experienced assessor who is an associate editor of a Springer journal, the designation was nevertheless based on expert opinion. While we may have over- or underestimated advisable use, our findings regarding guideline usage are consistent with those of other publications. Finally, the level of adherence to the reporting guidelines was not evaluated in the manuscripts that reported having used them; it was beyond the scope of our study. However, several recent publications have shown that adherence to guidelines such as PRISMA and CONSORT has not been optimal in diverse areas, including emergency medicine (14), internal medicine (15), head and neck cancer (16), cardiovascular medicine (17), pediatric urology (18), occupational health (19), otorhinolaryngology (20), anesthesiology (21), and obstetrics (22). Others have found inappropriate use of STROBE as a tool to assess the methodological quality of studies or as a guideline on how to design and conduct studies (23).

In conclusion, reporting guidelines are infrequently used in rheumatology despite their intended goal and their endorsement by most journals. Although data to clarify why guidelines are not utilized is not available, our exploratory study is a starting point for future studies investigating possible reasons. For example, studies may examine authors' awareness of guidelines and the perceived level of usefulness of specific guidelines among authors and publishers. Research may further explore whether the use of reporting guidelines increases the likelihood of manuscript acceptance, a journal's rationale for transitioning from endorsing to enforcing the use of reporting guidelines and the associated opportunity costs. It would also be interesting to assess whether using these guides could save costs in the peer review process, which was estimated at 100 million hours in 2020, with an estimated monetary value of the time US-based reviewers spent on revisions of more than 1.5 billion dollars (3). For now, the authors' position is to support the use of reporting guidelines.

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None

References

1.- National Research Council (US) Committee on Responsibilities of Authorship in the Biological Sciences. Sharing publication-related data and materials: responsibilities of authorship in the life sciences. Washington (DC): National Academies Press (US); 2003. 2, The Purpose of Publication and Responsibilities for Sharing. Available from: https://www.ncbi.nlm.nih.gov/books/NBK97153/

2.- Barajas-Ochoa A, Cisneros-Barrios A, Ramos-Remus C. Evaluation of the quality and subsequent performance of manuscripts rejected by Clinical Rheumatology: A research report [published online ahead of print, 2022 Jun 13]. Clin Rheumatol. 2022;10.1007/s10067-022-06238-4. doi:10.1007/s10067-022-06238-4.

3.- Aczel B, Szaszi B, Holcombe AO. A billion-dollar donation: estimating the cost of researchers' time spent on peer review. Res Integr Peer Rev. 2021 Nov 14;6(1):14. doi: 10.1186/s41073-021-00118-2. PMID: 34776003; PMCID: PMC8591820.

4.- The EQUATOR Network. https://www.equator-network.org/. Accessed 14 May 2022.

5.- Turner L, Shamseer L, Altman DG, Schulz KF, Moher D. Does use of the CONSORT Statement impact the completeness of reporting of randomised controlled trials published in medical journals? A Cochrane review. Syst Rev. 2012;1:60. Published 2012 Nov 29. doi:10.1186/2046-4053-1-60

6.- Ibrahim F, Tom BD, Scott DL, Prevost AT. A systematic review of randomised controlled trials in rheumatoid arthritis: the reporting and handling of missing data in composite outcomes. Trials. 2016;17(1):272. Published 2016 Jun 2. doi:10.1186/s13063-016-1402-5

7.- Hopewell S, Ravaud P, Baron G, Boutron I. Effect of editors' implementation of CONSORT guidelines on the reporting of abstracts in high impact medical journals: interrupted time series analysis. BMJ. 2012;344:e4178. Published 2012 Jun 22. doi:10.1136/bmj.e4178

8.- Scales CD Jr, Norris RD, Keitz SA, et al. A critical assessment of the quality of reporting of randomized, controlled trials in the urology literature. J Urol. 2007;177(3):1090-1095. doi:10.1016/j.juro.2006.10.027

9.- Rao A, Brück K, Methven S, et al. Quality of Reporting and Study Design of CKD Cohort Studies Assessing Mortality in the Elderly Before and After STROBE: A Systematic Review. PLoS One. 2016;11(5):e0155078. Published 2016 May 11. doi:10.1371/journal.pone.0155078.

10.- SCImago Journal and Country Rank. SCImago Research Group. Available at: https://www.scimagojr.com/journalrank.php?category=2745&year=2019 (Accessed 20.02.2022)

11.- Clarivate Web of Science. Available at: https://support.clarivate.com/ScientificandAcademicResearch/s/article/Web-of-Science-Core-Collection-Web-of-Science-Categories?language=en_US. (Accessed 21.02.2022].

12.- Mannocci A, Saulle R, Colamesta V, D'Aguanno S, Giraldi G, Maffongelli E et al. What is the impact of reporting guidelines on Public Health journals in Europe? The case of STROBE, CONSORT and PRISMA. Journal of Public Health (Oxford, England), 2015; 37(4), 737–40. Available at: https://doi.org/10.1093/pubmed/fdu108

13.-Koch M, Riss P, Umek W, Hanzal E. The explicit mentioning of reporting guidelines in urogynecology journals in 2013: A bibliometric study. Neurourol Urodyn. 2016; 35(3):412–6. Available at: doi:10.1002/nau.22726.

14.- Nawijn F, Ham WHW, Houwert RM, Groenwold RHH, Hietbrink F, Smeeing DPJ. Quality of reporting of systematic reviews and meta-analyses in emergency medicine based on the PRISMA statement. BMC Emerg Med. 2019;19(1):19. Published 2019 Feb 11. doi:10.1186/s12873-019-0233-6

15.- McErlean M, Samways J, Godolphin PJ, Chen Y. The reporting standards of randomised controlled trials in leading medical journals between 2019 and 2020: a systematic review [published online ahead of print, 2022 Mar 3] [published correction appears in Ir J Med Sci. 2022 Mar 17;:]. Ir J Med Sci. 2022;1-8. doi:10.1007/s11845-022-02955-6

16.- Canagarajah NA, Porter GJ, Mitra K, Chu TSM. Reporting quality of surgical randomised controlled trials in head and neck cancer: a systematic review. Eur Arch Otorhinolaryngol. 2021;278(11):4125-4133. doi:10.1007/s00405-021-06694-9

17.- Sims MT, Bowers AM, Fernan JM, Dormire KD, Herrington JM, Vassar M. Trial registration and adherence to reporting guidelines in cardiovascular journals. Heart. 2018;104(9):753-759. doi:10.1136/heartjnl-2017-312165

18.- McGrath M, Chen C, Braga LH, Farrokhyar F. Quality of reporting for pilot randomized controlled trials in the pediatric urology literature-A systematic review. J Pediatr Urol. 2021;17(6):846-854. doi:10.1016/j.jpurol.2021.09.012

19.- Tikka C, Verbeek J, Ijaz S, et al. Quality of reporting and risk of bias: a review of randomised trials in occupational health. Occup Environ Med. 2021;78(9):691-696. doi:10.1136/oemed-2020-107038

20.- Peters JP, Hooft L, Grolman W, Stegeman I. Assessment of the quality of reporting of randomised controlled trials in otorhinolaryngologic literature - adherence to the CONSORT statement. PLoS One. 2015;10(3):e0122328. Published 2015 Mar 20. doi:10.1371/journal.pone.0122328

21.- Elliott L, Coulman K, Blencowe NS, et al. A systematic review of reporting quality for anaesthetic interventions in randomised controlled trials. Anaesthesia. 2021;76(6):832-836. doi:10.1111/anae.15294

22.- Doulaveris G, Vani K, Saccone G, Chauhan SP, Berghella V. Number and quality of randomized controlled trials in obstetrics published in the top general medical and obstetrics and gynecology journals. Am J Obstet Gynecol MFM. 2022;4(1):100509. doi:10.1016/j.ajogmf.2021.100509

23.- da Costa BR, Cevallos M, Altman DG, Rutjes AW, Egger M. Uses and misuses of the STROBE statement: bibliographic study. BMJ Open. 2011;1(1):e000048. doi:10.1136/bmjopen-2010-000048

Table 1. Acronyms, meanings, and references of reporting guidelines studied.

Acronyms and Meanings	Web Page
EQUATOR network: Enhancing the QUAlity and Transparency Of health Research	https://www.equator-network.org/
CONSORT: CONsolidated Standards of Reporting Trials	https://www.equator-network.org/reporting-guidelines/consort/
STROBE: Strengthening the Reporting of Observational Studies in Epidemiology	https://www.equator-network.org/reporting-guidelines/strobe/
PRISMA: Preferred Reporting Items for Systematic Reviews and Meta-Analysis	https://www.equator-network.org/reporting-guidelines/prisma/
MOOSE: Meta-analysis Of Observational Studies in Epidemiology	https://www.equator-network.org/reporting-guidelines/meta-analysis-of-observational-studies-in-epidemiology-a-proposal-for-reporting-meta-analysis-of-observational-studies-in-epidemiology-moose-group/
SPIRIT: Standard Protocol Items: Recommendations for Interventional Trials	https://www.equator-network.org/reporting-guidelines/spirit-2013-statement-defining-standard-protocol-items-for-clinical-trials/
STARD: Standards for Reporting Diagnostic accuracy studies	https://www.equator-network.org/reporting-guidelines/stard/
TRIPOD: Transparent reporting of a multivariable prediction model for individual prognosis or diagnosis	https://www.equator-network.org/reporting-guidelines/tripod-statement/
CARE: Consensus-based Clinical Case Reporting Guideline Development	https://www.equator-network.org/reporting-guidelines/care/
STREGA: STrengthening the REporting of Genetic Association Studies	https://www.equator-network.org/reporting-guidelines/strobe-strega/
ARRIVE: Animal Research: Reporting of In Vivo Experiments	https://www.equator-network.org/reporting-guidelines/improving-bioscience-research-reporting-the-arrive-guidelines-for-reporting-animal-research/
RECORD: REporting of studies Conducted using Observational Routinely-collected Data	https://www.equator-network.org/reporting-guidelines/record/
COREQ: Consolidated criteria for reporting qualitative research	https://www.equator-network.org/reporting-guidelines/coreq/

AGREE II: Advancing guideline development, reporting and evaluation in healthcare	https://www.equator-network.org/reporting-guidelines/the-agree-reporting-checklist-a-tool-to-improve-reporting-of-clinical-practice-guidelines/
CHERRIES: Checklist for Reporting Results of Internet E-Surveys	https://www.equator-network.org/reporting-guidelines/improving-the-quality-of-web-surveys-the-checklist-for-reporting-results-of-internet-e-surveys-cherries/
CHEERS: Consolidated Health Economic Evaluation Reporting Standards	https://www.equator-network.org/reporting-guidelines/cheers/
SQUIRE: Standards for QUality Improvement Reporting Excellence.	https://www.equator-network.org/reporting-guidelines/squire/

Table 2. Frequency distribution of actual and advisable use of reporting guidelines and advisable use rate by selected rheumatology journal

	Ann Rheum Dis	Arthritis Rheum	Arthritis Care Res	Rheumatology	J Rheumatology
Assessed articles, n (%)	176	190	169	213	147
Advisable articles for reporting guidelines, n (%)	122 (69)	140 (74)	150 (89)	154 (72)	127 (86)
Use of any reporting guidelines, n (AR*)	12 (0.09)	6 (0.04)	16 (0.10)	12 (0.07)	4 (0.03)
Reporting Guidelines	**Actual Use/Advisable Use (Advisable Rate*)**				
CONSORT**	4 /22 (0.18)	2/22 (0.09)	4 / 15 (0.26)	4 / 16 (0.25)	0 / 7 (0)
STROBE#	3 / 40 (0.07)	2 /67 (0.03)	3 / 83 (0.03)	3 / 86 (0.03)	1 / 79 (0.01)
PRISMA$ or MOOSE&	2 / 5 (0.4)	0 / 1 (0)	8 / 10 (0.8)	4 / 5 (0.8)	3 / 4 (0.75)
SPIRIT+	0 / 0	0/ 0	0 / 0	0 / 0	0 / 0
STARD@	0 / 4 (0)	0 / 9 (0)	0 / 2 (0)	0 / 11 (0)	0 / 5 (0)
TRIPOD°	2 / 7 (0.28)	1 / 3 (0.33)	0 / 6 (0)	0 / 4 (0)	0 / 0
CARE**	0 /0 (0)	0 / 3 (0)	0 /0	0 / 3 (0)	0 / 6 (0)
STREGAª	0 / 18 (0)	0 / 7 (0)	0 / 0	0 / 9 (0)	0 / 3 (0)
ARRIVE§	0 / 13 (0)	1 / 20 (0.05)	0 / 0	1 / 7 (0.14)	0 / 0
RECORD¤:	1 / 13 (0.07)	0 / 8 (0)	0 / 27 (0)	0 / 13 (0)	0 / 22 (0)
COREQΦ:	0 / 0	0 / 0	1 / 7 (0.14)	0 / 0	0 / 1 (0)

***AR=Advisable Rate; proportion related to the advisable articles**

****CONSORT**: CONsolidated Standards of Reporting Trials

 # STROBE: Strengthening the Reporting of Observational Studies in Epidemiology

$ PRISMA: Preferred Reporting Items for Systematic Reviews and Meta-Analysis

& MOOSE: Meta-analysis Of Observational Studies in Epidemiology

+ SPIRIT: Standard Protocol Items: Recommendations for Interventional Trials

@ STARD: Standards for Reporting Diagnostic accuracy studies

°TRIPOD: Transparent reporting of a multivariable prediction model for individual prognosis or diagnosis

****CARE**: CAse REports

ª**STREGA**: STrengthening the REporting of Genetic Association Studies

§**ARRIVE**: Animal Research: Reporting of In Vivo Experiments

¤**RECORD**: REporting of studies Conducted using Observational Routinely-collected Data

ϕ**COREQ**: Consolidated criteria for reporting qualitative research

EQUATOR network: Enhancing the QUAlity and Transparency Of health Research