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Updated Editorial Guidance for Quality and Reliability of Research Output

Armen Yuri Gasparyan,[1] **Marlen Yessirkepov**,[2] **Alexander A. Voronov**,[3] **Anna M. Koroleva**,[4] **and George D. Kitas**[1,5]

[1]Departments of Rheumatology and Research and Development, Dudley Group NHS Foundation Trust (Teaching Trust of the University of Birmingham, UK), Russells Hall Hospital, Dudley, West Midlands, UK
[2]Department of Biology and Biochemistry, South Kazakhstan Medical Academy, Shymkent, Kazakhstan.
[3]Department of Marketing and Trade Deals, Kuban State University, Krasnodar, Russian Federation
[4]Department of Economics and Organization of Production, Industrial University of Tyumen, Tyumen, Russian Federation
[5]Arthritis Research UK Epidemiology Unit, University of Manchester, Manchester, UK

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Address for Correspondence:
Armen Yuri Gasparyan, MD
Departments of Rheumatology and Research and Development, Dudley Group NHS Foundation Trust (Teaching Trust of the University of Birmingham, UK), Russells Hall Hospital, Pensnett Road, Dudley DY1 2HQ, West Midlands, UK.
E-mail: a.gasparyan@gmail.com

ORCID iDs
Armen Yuri Gasparyan
https://orcid.org/0000-0001-8749-6018
Marlen Yessirkepov
https://orcid.org/0000-0003-2511-6918
Alexander A. Voronov
https://orcid.org/0000-0001-8505-7345
Anna M. Koroleva
https://orcid.org/0000-0003-3893-6392
George D. Kitas
https://orcid.org/0000-0002-0828-6176

ABSTRACT

Over the past few years, updated editorial policy statements of several associations have provided a platform for improving the quality of scientific research and publishing. The updates have particularly pointed to the need for following research reporting standards, authorship and contributorship regulations, implementing digital tools for the identification and crediting academic contributors, and moving towards optimal ethical open-access models. This article overviews some of the recent editorial policy statements of global editorial associations and reflects on the role of the regional counterparts in advancing scholarly publishing. One of the globally promoted documents is the Recommendations of the International Committee of Medical Journal Editors (ICMJE). Its latest versions contain statements on proper research reporting, reviewing, editing, and publishing. Points on ethical target journals and 'predatory' sources are also available. This year, in a move to update its editorial policy, the Committee on Publication Ethics (COPE) released the Core Practices, comprehensively reflecting on the major issues in publication ethics. Updated joint statements of medical writers associations are also available to implement transparent policy on contributorship in sponsor-supported research projects and related reports. Several suggestions are put forward to improve global editorial statements on online profiling, crediting, and referencing. It is also highlighted that knowledge and implementation of updated editorial guidance is essential for editors' good standing.

Keywords: Editorial Policies; Periodicals as Topic; Information Storage and Retrieval; Quality Control; Authorship; Science Writing; Publishing

EDITORIAL POLICY GUIDELINES

While publishing quality articles is a top priority for academic institutions and publication outlets worldwide, there are still only few guidelines and editorial policy documents that address issues of interest to all concerned parties. With the fast-changing publishing environment and growing threats to the trustworthiness of publications, even the available scarce guidance becomes outdated within few years, if not months, of coming to light.

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The scope of professional interests of editors encompasses a wide range of issues related to authorship, peer review, journal publishing and post-publication promotion, editing, ethics and integrity, and editors' competences.[1] With the constantly changing policies in each of these domains, the journal instructions as tools for enforcing statements of editorial associations become outdated shortly after the drafting and updating. What is more concerning is that the enforcement of these statements is often poorly controlled, making even the best editorial guidance ineffective.[2] In view of the growing complexities of scholarly writing and publishing, the guiding role of research institutions, flagship journals, such as *Nature* and *Science*,[3] and learned associations[4] with globally promoted recommendations is increasing. Their joint efforts, aimed at updating editorial policy and revising available recommendations, may prevent numerous cases of erroneous and unethical publications. The issue of updating editorial recommendations is getting bigger with the current trend towards cross-disciplinary research and publishing on the one hand and growing activity of non-Anglophone researchers, authors, and publishers on the other hand, necessitating guidance that meet the needs of all concerned parties.[5,6]

GLOBAL EDITORIAL ASSOCIATIONS AND THEIR UPDATED DOCUMENTS

One of the main functions of editorial associations relates to drafting and promoting best research reporting, reviewing, editing, and publication ethics standards. The aim of these documents is to advise authors, reviewers, editors, and publishers over the issues encountered by them in their daily practice. Related variations by academic discipline are inevitable, but it is assumed that there should be common core content, addressing points on the integrity of writing and publishing of global interest. There are regional differences in language backgrounds, research infrastructure and publishing traditions, necessitating the development of regional and local sets of standards.

Traditionally, journal editors of biomedical and allied specialties, concerned with healthcare implications of their publications, have been at the forefront of developing and promoting research reporting rules and ethical regulations for their contributors. Perhaps this is why the Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals of the International Committee of Medical Journal Editors (ICMJE) is currently the only document, which is endorsed and implemented by the majority of biomedical editors. Most statements of the Recommendations are also useful for editors of nonmedical journals, who can draft their own instructions and remind their contributors about acceptable authorship, conflicts of interest disclosures, unbiased and rigorous peer review, relevant and ethical referencing, and best target journals. The initial version of the document was published as the Uniform Requirements for Manuscripts Submitted to Biomedical Journals back in 1978, and some (outdated) journal instructions still refer to this old version.

The ICMJE unites 14 representatives of the top global and flagship regional general medical journals and 2 representatives of the National Library of Medicine of the U.S. and the World Association of Medical Editors. The ICMJE Recommendations as the quintessential source of evidence, accumulated wisdom, and consensus statements of other editorial organizations have been consulted by several generations of editors, who drafted numerous editorial instructions and influenced ethical publication activity worldwide. Over the past decades,

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the document has witnessed major transformations in the publishing landscape, which have been influenced by the trends in cross-disciplinary research, digitization, open access, indexing, and impact-oriented evaluations. Unlike other editorial associations, the ICMJE lists journals adhering to the Recommendations on its website.[7]

One of the important points of the updated Recommendations refers to consulting guidelines for reporting research data, which are available at the EQUATOR Network website.[8] There are currently 402 guidelines, listed at the EQUATOR Network website, which can be instrumental for drafting, reviewing, and editing most types of clinical trial reports, systematic reviews, observational, qualitative and animal studies, and economic evaluations. These guidelines predominantly relate to research-intensive disciplines, such as cardiology and rheumatology, but can be also consulted, adapted, and employed by non-medical specialists. As a good example, the list of guidelines includes the American Medical Writers Association (AMWA)–the European Medical Writers Association (EMWA)–the International Society for Medical Publication Professionals (ISMPP) Joint Position Statement on the Role of Professional Medical Writers (released January 2017), specifying the role and responsibilities of medical writers who support authors.[9] The Position Statement mandates the adherence to the Good Publication Practice (GPP3) guidelines of the ISMPP[10] and provides a template for disclosing names of medical writers and listing their academic contributions. Such a disclosure may increase transparency of research reports and properly credit company-sponsored contributions of those who edit language, statistics, and graphical materials in scholarly articles and supplementary items.[11]

In 2013, the ICMJE updated its traditional authorship criteria and emphasized the accountability of all co-authors for integrity of writing and presenting all professional aspects in their reports. The adherence to the revised authorship criteria is particularly important for emerging scientific powers and countries where cultural divergence is in conflict with global publication standards.[12] In its 3rd revision of the GPP guidelines, the ISMPP referred to the new set of the authorship criteria in view of the relationships between sponsoring companies, professional writers, and scientific authors, all of whom were advised to fully disclose their academic contributions and technical support in their articles, particularly in sponsored clinical trial reports.[13] Such advice is, for example, important for Europe and North America, where most clinical researchers rely on medical writers' assistance for scientific editing, journal styling, and adhering to research reporting standards.[14] The advice is also timely for authors from other continents with inadequate English skills, poor knowledge of research reporting guidelines, and lack of time for writing tasks despite the urge to increase publication activity.[15,16]

Current annual updates of the ICMJE Recommendations may help editors and publishers incorporate new points in the established parts and open entirely new sections in their journal instructions (e.g., sections on ‘predatory’ journals and data sharing policy). The latest version of the document clearly presents examples of data sharing statements for reports on clinical trials.[17] The new requirements for data sharing are enforced by all ICMJE journals processing clinical trial reports from July 2018 onward. The data sharing initiative is widely supported by associations, such as the ISMPP, and is believed to maximize benefits of pharma-sponsored trials.[18]

One of the new points, which is present in the latest versions of the Recommendations, prioritizes complete information about authors and listing their Open Researcher and

Contributor Identification (ORCID). The ORCID initiative is increasingly important for the integrity and visibility of author and reviewer contributions, and particularly in view of the growing concerns over 'fake' reviewer activities in some established and start-up journals.[19]

Another key section of the ICMJE document highlights a balanced approach to peer review as a helpful procedure without specifying review timelines and average number of referees per manuscript and, at the same time, points to the ultimate responsibility of editors for all published items in their journals. Importantly, such guidance on peer review focuses on the quality rather than the quantity of reviewer comments.

The number of cases of research and publication misconduct has increased exponentially with the proliferation of online journals. Despite the editors' formal adherence to some norms, there are still numerous violations of ethical code of conduct, which are compounded by oversights in updating ethics guidelines. Such oversights and incompleteness are particularly frequent in journals from non-Anglophone countries and developing academic disciplines.[6,20] A workable solution to the issue is perhaps a uniform and comprehensive approach to the integrity of publication processes declared and employed by all editors, publishers, and their associations.[21]

The Committee on Publication Ethics (COPE) is the world's largest association of editors with approximately 12,000 members from diverse professional and language backgrounds. It was established in 1997 by a small group of UK-based editors of top medical journals, and particularly those representing the *BMJ*, *The Lancet*, *British Journal of Anaesthesia*, *Journal of Bone and Joint Surgery*, *Annals of the Rheumatic Diseases*, *Journal of Clinical Pathology*, and *Gut*. The COPE regular meetings are aimed at discussing cases of research and publication misconduct.[22] Over the past 2 decades, numerous guidelines and flowcharts have been developed by COPE to offer editorial advice on handling cases of misconduct related to authorship, conflicts of interest, plagiarism, data fabrication, and retractions. In January 2018, COPE published the Core Practices, consisting of 10 statements on publication ethics with links to a wealth of related resources available on the COPE website. The new document replaced the previously promoted the Code of Conduct and Best Practice Guidelines for Editors and Code of Conduct for Journal Publishers.[23] Another updated resource, which is available on the website is "the COPE Ethical Guidelines for Peer reviewers," presents different models of peer review and responsibilities of peer reviewers.[24] Importantly, all these documents are applicable to not only medical, but also nonmedical journals.

There have been major developments in the Open Access movement over the past quarter of the century.[25] Initially, the Budapest Open Access Initiative was launched in 2002 to preserve traditional values of scholarly publishing and benefit from the opportunities offered by the Internet.[26] It aimed to increase access to scholarly information and expand visibility of scientific authors. The initiative justified economic advantages of Open Access and considered self-archiving and open-access journals as strategic tools for achieving global results. In 2003, another important step for implementing the Open Access initiative was made by developing the Berlin Declaration on Open Access, which echoed the Budapest Initiative and supported the global transition to electronic open-access media by securing copyrights, distribution models, and permanent digital archiving.[27] Subsequently, numerous traditional and start-up journals had chosen different models of open access to increase their global visibility, speed up post-publication promotion, and provide better services to professional societies.[28]

While the Open Access movement itself brings about numerous advantages for all parties involved in science communication, it also encounters variable definitions of Open Access and poor understanding of its components in some parts of the world. There is still misunderstanding among some journal editors of the differences between freely accessible and properly digitized, indexed, and archived publications. Not all journals that openly post their contents online meet strict criteria of scholarly open-access journals. Optimal models of Open Access imply proper online manuscript processing and publishing platforms, adoption of certain copyrights and 'liberal' distribution licenses, machine-readability and convertibility of online items, permanent digital identifiers, ability to integrate with and transfer contents to other online platforms, and archiving by reliable digital libraries and repositories. Individual and journal digital identifiers, for example, facilitate unbiased peer review, improve tracking of research outputs, and become essential attributes of online communications.[29,30] There are also ethical issues related to charging authors opting for open access. Authors should be provided with transparent online information on any incurred charges. All these and many other issues are at the focus of attention of the Open Access Scholarly Publishers Association (OASPA).

The OASPA was founded in 2008 by a small group of open-access publishers to advocate their interests in the changing publishing environment and set standards in the field. It currently has 129 members, including representatives of small and large publishers, libraries, editorial management platforms, and editing agencies.[31] The Association publicized its Statement on Open Access, highlighting the following definition of Open Access: "The dissemination of peer-reviewed manuscripts containing original research or scholarship immediately upon publication, at no charge to user groups, without requiring registration or other access barriers." OASPA strongly encourages the adoption of the Creative Commons Attribution License (CC-BY) as the most liberal and compatible with the definition of Open Access.[32] Although the Association endorses several other declarations, statements, and initiatives, perhaps the most important and applicable to all open-access journals is the OASPA Recommendations, which was collaboratively developed in 2014 and last updated in 2018 by the COPE, the Directory of Open Access Journals (DOAJ), and the World Association of Medical Editors (WAME).[33]

The Principles of Transparency includes 16 points, prioritizing the importance of external peer review, copyrights and licensing information, professionally designed journal websites, permanent digital archiving, and disclosing conflicts of interest and sources of revenue. The adherence to these points may help editors and publishers alike improve the quality of open-access publishing, avoid allegations of breaches in publication ethics and increase indexability of the emerging sources.[34] It should be noted that the ICMJE Recommendations also contain points about 'predatory' open-access media, or 'pseudo-journals,' and provide cross-links to the statements that list criteria of such entities. In particular, links to the Think Check Submit global initiative[35] and the WAME statement distinguish trustworthy sources from predatory open-access journals.[36]

WAME was established in 1995 to strengthen ties between editors of peer-reviewed medical journals, improve editorial standards, and promote professionalism in the field. WAME's e-forum (e-Listserve) is the best resource for continuing education of its members, which also serves as a platform for developing and promoting new editorial policy documents. There are currently several policy statements applicable to a wide range of scholarly journals.[37] In response to the growing concerns over 'fake' reviewer activities worldwide, WAME released an action plan in 2015 to keep fraudulent reviewers away from peer review

by requesting and validating potential referees' ORCID iDs. Notably, WAME's publication ethics policies have been praised in the context of the fight against violations of research and publication ethics in countries of emerging scientific powers.[38]

STATEMENTS OF PROFESSIONAL SOCIETIES

In December 2012, a group of researchers and journal editors attending the American Society for Cell Biology (ASCB) annual meeting discussed and published the San Francisco Declaration on Research Assessment (DORA), which was aimed at moving away from journal-based metrics, including the Journal Impact Factor (JIF), for evaluation of individual articles and for hiring, promoting, and funding researchers for their scholarly contributions.[39] The Declaration emphasizes scientific merits of publications and provides a strategy for evaluating a range of citation-based and alternative metrics in the context of ranking and targeting journals and promoting individual authors. As of August 8, 2018, the list of the signatories of the Declaration includes 12,480 individuals and 505 organisations from all over the world. It has been endorsed by numerous academic institutions, regional and global scholarly journals, and editorial associations. In 2017, all *Nature* journals announced their support of the DORA.[40] In January 2018, OASPA formally endorsed the initiative and advised all concerned parties against "over-emphasising the venue of publication of research findings… and introducing perverse incentives into the scholarly reward system."[41] Over the past few years, the Declaration has influenced research assessment and journal targeting tactics of early-career researchers and senior fellows in most countries. However, in some countries there are still erroneous practices of incentivizing authors for publications in high-impact journals and disqualifying those who target low-impact media.[42] Such unjust incentives discredit the whole field of bibliometrics. The latest example of inappropriate use of the JIFs and article-level citations is the case of crediting contributors of genomic research articles with more than 1,000 co-authors. The case has been widely discussed, leading to the omission of such articles from university ranking evaluations.[43,44] Obviously, editors and publishers, and particularly those in nonmainstream science countries, have to increase awareness of the DORA and amend their editorial policies to avoid negative consequences of the 'impact obsession' for their academic communities.

ROLE OF REGIONAL EDITORIAL ASSOCIATIONS

Several regional editorial associations have emerged over the past decades to support their members and contribute to science growth in respective parts of the world. Despite providing ample opportunities for networking and discussing issues at regular meetings, most of these associations still lack their own editorial recommendations and publication guidelines. The need for locally applicable official statements and recommendations is particularly apparent in East Asia and other regions with heavy investments in research and development, expanding international collaboration, growing publication activity, and increasing share of the world's high-quality research,[45,46] necessitating the internationalization of the representative periodicals along with the policy adjustments for peer review, authorship, conflict of interest disclosures, and researchers' (English) writing skills.

In an exemplary move to improve the quality of local publications the Korean Association of Medical Journal Editors (KAMJE) adopted a strategy of interacting with global editorial associations, which eventually led to membership of its flagship journal in the ICMJE in

2016.[47,48] By joining the ICMJE editors of the *Journal of Korean Medical Science* officially accepted all regulations of the global association as locally applicable. They were also offered a unique opportunity to voice concerns over the local writing and editing issues, with a chance to incorporate relevant updates in the ICMJE Recommendations.

Likewise, another successful initiative was launched by Russian science editors aiming at increasing scientific prestige of their journals by improving editorial management, advancing non-Anglophone authors' writing skills, prioritizing innovative articles, paying more attention to the local readers' needs, and expanding ties with editorial associations.[49] Although the absolute majority of academic journals in Russia still continue publishing in Russian, have low citation metrics and serve interests of regional readers,[50] the digitization and advanced formatting of the articles' meta-data have expanded visibility of numerous journals across all subject categories.[51] With support of the Russian (Eurasian) Association of Science Editors and Publishers, which was launched in 2014, editors of the member-journals have familiarized themselves with recommendations of the global editorial associations, adjusted their instructions for authors, and expanded indexing of their journals by multidisciplinary and specialist bibliographic databases.[52]

CONCLUDING REMARKS

Regularly updated editorial recommendations provide a base for quality publishing (**Table 1**). Despite comprehensively covering almost all aspects of scientific writing, reviewing, editing, and publishing, even the most widely promoted recommendations and statements of global associations need to be updated further and implemented by editors from all scientific fields and language backgrounds.

Current digitization initiatives and availability of numerous agile online platforms for supporting authors, selecting reviewers, and verifying scholarly texts and references speed up the writing and publishing processes. Established and large publishers, equipped with updated instructions and advanced digital tools for publishing, continue growing fast while their start-up and small counterparts with scarce resources and incompatible with optimal models of open access find it difficult to compete. Successful publication outlets need, first and foremost, contributors with outstanding profiles. Updated points on authorship and peer review in the currently available editorial recommendations guide editors how to attract and credit their best authors and reviewers. However, it is still advisable to incorporate/strengthen statements on the ORCID and Publons initiatives in both global editorial recommendations and instructions for authors of most, if not all, scholarly journals. The ORCID and Publons identification systems along with many other emerging research and author profiling platforms increase visibility of scholarly journals and, employed by editors at their daily practices, help distinguish the best contributors and avoid misconduct.[29,53,54]

The evaluation of researcher and author profiles is itself a major task for journal editors, who need a comprehensive guidance on this issue. The available recommendations still lack related points. Distinguishing solo and small-group authorship from contributorship in multi-authored articles, including those in high-impact journals, is the main challenge. Related individual citation metrics differ enormously, and may give a false impression of the productivity and impact. The case with the questioned credibility of authorship in practice guidelines with numerous contributors is a prime example.[55] Abundantly cited multi-country

Table 1. Examples of essential updates of global editorial associations

Organizations	Guidelines	Year of latest release	Website	Notes
International Committee of Medical Journal Editors (ICMJE)	Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals	2017	http://www.icmje.org/recommendations/	Annually updated recommendations provide points on most aspects of scholarly writing, reviewing, and publishing. The document is widely consulted by medical journal editors, but may be helpful for allied specialists.
Enhancing the QUALity and Transparency Of health Research network (EQUATOR)	Reporting guidelines for main study types (randomized trials, systematic reviews, observational studies, case reports, animal pre-clinical studies, etc.)	2018	http://www.equator-network.org/reporting-guidelines/	Currently, 402 guidelines are presented at the EQUATOR website to help authors, reviewers, and editors completely and ethically report research results. Biomedical specialists may benefit from most of the available standards.
Committee on Publication Ethics (COPE)	Core Practices	2018	https://publicationethics.org/core-practices	The ten statements of the document cover most issues in ethical editing and publishing, ranging from authorship and data sharing to peer review and post-publication communications.
International Society for Medical Publication Professionals (ISMPP)	Good Publication Practice (GPP3) guidelines	2015	http://www.ismpp.org/gpp3	The ten points of the guidance mandate complete, accurate, timely, and ethical reporting of company-sponsored trial results, with specifying roles and responsibilities of all contributors.
American Medical Writers Association (AMWA), European Medical Writers Association (EMWA), ISMPP	AMWA–EMWA–ISMPP Joint Position Statement on the Role of Professional Medical Writers	2017	https://www.equator-network.org/reporting-guidelines/amwa%E2%80%92emwa%E2%80%92ismpp-joint-position-statement-on-the-role-of-professional-medical-writers/	The Statement points to ethical obligations of professional writers and authors, who are advised to consult relevant reporting guidelines and adhere to the ICMJE authorship criteria. A template for disclosure of professional writing support is provided in the Statement.
World Association of Medical Editors (WAME)	Identifying Predatory or Pseudo-Journals	2017	http://www.wame.org/identifying-predatory-or-pseudo-journals	The document is aimed to increase the awareness of 'predatory' media among all stakeholders in scholarly publishing. A set of criteria is provided to distinguish predatory sources from legitimate press.
COPE, Directory of Open Access Journals (DOAJ), Open Access Scholarly Publishers Association (OASPA), and WAME	Principles of Transparency and Best Practice in Scholarly Publishing	2018	https://publicationethics.org/resources/guidelines-new/principles-transparency-and-best-practice-scholarly-publishing	The document presents 16 statements on the principles of transparency of open-access journals. It highlights the importance of the journal unique name, functionality of its online platform, peer review, copyrights, distribution, permanent digital archiving, etc.

articles on global health reports, appearing in one's online profile, should be also evaluated cautiously since academic contributions of co-authors from low-middle-income countries in such articles can be negligible.[56,57]

While currently available digitization tools and Open Access enable fast publication and post-publication promotion, the growing number of poor-quality and apparently predatory journals on the one side[58] and retractions on the other side[59] suggest that editors' good standing is indispensable, and that blindly relying on online processing threatens the trustworthiness of the academic publishing enterprise. Even the best online management systems cannot substitute editorial intelligence. Scholarly journals, as never before, need devoted contributors familiar with updated editorial recommendations and experienced in research reporting and reviewing. Such contributors may successfully compete for memberships in prestigious editorial associations to further advance the publication process. A recent international survey of 148 biomedical editors, who represented major editorial associations, reaffirmed that core competences of journal experts are built around their knowledge and skills in statistics, research methods, publication ethics, peer review, and journal indexing.[60] The results of the survey provide additional points for further updating editorial recommendations for biomedical and allied journals.

Knowledge of journal indexing, ranking, and functionalities of bibliographic databases are increasingly important for citing trustworthy items by authors and verifying reference

lists by reviewers and editors. Over the past few years, multidisciplinary databases, such as Scopus, have upgraded their selection criteria, marked open-access sources with distinguished editorial policies (those listed by the DOAJ), and discontinued coverage of hundreds of periodicals with spurious publication and citation practices.[61] Likewise, PubMed Central of the National Library of Medicine of the U.S., the most prestigious global open-access repository, has initiated the re-evaluation and discontinued archiving of numerous periodicals that no longer meet "scientific and editorial standards."[62] Additionally, recent expert evaluations have pointed to a high percentage of substandard open-access journals in some subject categories (e.g., 45% in emergency medicine) and warned unsuspecting contributors to distance themselves from these sources.[63-66]

Global editorial associations, such as the ICMJE and the WAME, have already publicized their statements on predatory press to weigh the target journals. However, scientific authors and evaluators alike still need a comprehensive guidance on how to distinguish and cite reliable and trustworthy items. Citations are currently the most powerful bibliometric tools for promoting publications. By ignoring untrustworthy sources and considering relevant replacements for fraudulent, erroneous, and poorly checked references, authors and reviewers alike may actively contribute to the global fight against vanity press. What global and regional editorial associations may need to incorporate in their future updates is perhaps a set of pointers on comprehensive and systematic searches through the established multidisciplinary and specialist databases for maximizing the reliability and diversity of article references. Related points are particularly important in the context of writing and editing systematic reviews, practice guidelines, policy articles, and other evidence synthesis documents.[67]

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