Rapid Communication

Ethical integrity in systematic reviews and meta-analyses: challenges, pitfalls, and best practices in ophthalmology

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ABSTRACT

Background: Systematic reviews and meta-analyses (SRMAs) are central to evidence-based ophthalmology, influencing clinical guidelines and treatment decisions. However, the rapid increase in SRMA publications has exposed serious ethical concerns, including selective reporting, duplicate publication, plagiarism, authorship misconduct, and undeclared conflicts of interest. Despite established frameworks such as Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA), International Prospective Register of Systematic Reviews (PROSPERO), and International Committee of Medical Journal Editors (ICMJE), ethical compliance remains inconsistent, undermining the credibility of synthesized evidence. We aimed to examine the ethical landscape of SRMAs with a particular focus on ophthalmology, highlighting common pitfalls, evaluating current guidelines, and providing practical recommendations to ensure that these reviews are conducted and reported with the highest ethical standards—ultimately safeguarding the integrity of the evidence base that underpins clinical eye care.

Methods: A structured literature search was conducted in PubMed, Scopus, Web of Science, and Google Scholar through May 2025 using combinations of the terms "systematic review," "meta-analysis," "ethics," "research integrity," and "ophthalmology." Relevant guidelines, peer-reviewed studies, and editorials were synthesized to identify ethical pitfalls and propose best practice solutions.

Results: We illustrate these challenges with ophthalmology-specific examples and highlight the downstream impact of unethical SRMAs on clinical practice and public trust. We also propose actionable recommendations for researchers, editors, and institutions to enhance the ethical quality of SRMAs, including improved training in research integrity, stricter enforcement of reporting guidelines, and increased editorial oversight. By addressing these ethical dimensions, the ophthalmic community can ensure that SRMAs not only meet methodological benchmarks but also reflect the core values of scientific honesty, accountability, and patient-centeredness. Approximately one-third of ophthalmology SRMAs fail to assess bias or comply with PRISMA guidelines. Industry-sponsored reviews have shown a tendency to favor commercially linked interventions, raising objectivity concerns. Key ethical concerns include: lack of protocol registration, selective inclusion of studies, inclusion of retracted or flawed trials, duplicate or plagiarized data, and authorship and disclosure misconduct.

Conclusions: To protect the integrity of ophthalmic evidence synthesis, SRMAs must adhere to the highest ethical standards. Researchers should commit to transparent, methodologically rigorous, and ethically sound practices. Journals and institutions must enforce compliance, provide oversight, and support education in research integrity. Field-specific adaptations of reporting standards may further support ethical clarity. Ultimately, ethical SRMAs are critical to preserving trust, guiding responsible care, and fulfill their intended role as trustworthy instruments in advancing evidence-based ophthalmology.

KEYWORDS

review, systematic, systematic reviews as a topic, meta-analysis as topic, mixed treatment meta-analysis, ethics in publishing, publishing, ethics in, research misconduct, ophthalmology

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INTRODUCTION

Systematic reviews and meta-analyses (SRMAs) are cornerstone methodologies in evidence-based medicine. By systematically identifying, appraising, and synthesizing all available evidence addressing a focused clinical question, SRMAs aim to minimize bias and enhance reproducibility [1]. High-quality SRMAs often include statistical meta-analyses that pool data across studies, yielding more precise effect estimates and informing best practices. As such, SRMAs are widely regarded as "level I" evidence, the highest tier in most evidence hierarchies [1].

In ophthalmology, SRMAs have become indispensable for shaping clinical guidelines and advancing subspecialty knowledge. For instance, the American Academy of Ophthalmology incorporates SRMA-based findings when issuing Preferred Practice Patterns for diseases like age-related macular degeneration and glaucoma. Across the field, from retinal vascular disorders to corneal dystrophies, the number of published SRMAs has grown substantially, mirroring global trends. Between 1986 and 2016 alone, the annual publication of systematic reviews surged by over 2700% [1–3], reflecting the escalating demand for synthesized, high-quality evidence in vision science. Ophthalmology journals have responded by emphasizing transparent methodology: BioMed Central ophthalmology (BMC Ophthalmology), for example, strongly encourages as Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA)-compliant reporting and prospective registration in International Prospective Register of Systematic Reviews (PROSPERO) for all systematic reviews [1-3].

However, the increasing volume of SRMAs also raises critical ethical concerns. While SRMAs do not involve primary data collection from human subjects, their influence on clinical decision-making necessitates rigorous adherence to research integrity. Ethical lapses-such as undisclosed conflicts of interest, selective inclusion of studies, plagiarism, duplicate publication, or failure to flag methodologically flawed trials, can distort pooled conclusions and mislead clinicians. These risks are not theoretical: a cross-sectional analysis of 118 SRMAs found that fewer than half applied basic integrity checks, and only a fraction investigated whether included trials had ethical approval or disclosed conflicts of interest [4]. In ophthalmology, where SRMAs may justify invasive procedures, costly therapies, or guideline updates, the downstream implications of such oversights are profound.

Flawed or ethically compromised SRMAs not only jeopardize patient care but also contribute to research waste, consuming time, funding, and editorial space without yielding trustworthy conclusions [5]. In light of these challenges, ethical vigilance must extend beyond primary research to the synthesis level. Ophthalmic SRMAs must meet rigorous ethical standards: Transparent authorship and disclosure practices, registration of protocols, critical appraisal of study quality, and responsiveness to suspected misconduct in source studies.

This paper explores the ethical landscape surrounding SRMAs, particularly within ophthalmology. It highlights recurrent pitfalls, reviews current guidelines, and offers practical recommendations for conducting and reporting SRMAs with the highest ethical standards, ultimately protecting the integrity of the evidence base on which eye care depends.

Core Ethical Principles in Systematic Reviews and Meta-Analyses

SRMAs are not only scientific tools but also ethical enterprises. Given their pivotal role in shaping clinical practice and guidelines, particularly in ophthalmology, where evidence-based interventions directly affect vision preservation, the ethical integrity of SRMAs must be scrupulously maintained. Four core principles serve as the ethical foundation for conducting SRMAs responsibly: Transparency and protocol fidelity, accountability and methodological rigor, integrity and intellectual honesty, and the avoidance of conflicts of interest [6, 7].

Transparency and protocol fidelity are central to minimizing bias and ensuring reproducibility in SRMAs. Researchers are ethically obligated to predefine their methods before initiating the review process. This includes specifying the research question, eligibility criteria, search strategy, and analysis plan. Registering the protocol in a public registry such as PROSPERO further enhances transparency by deterring selective outcome reporting and unnecessary duplication [1, 6, 7]. Once a protocol is established, adherence to it is not merely a technical formality, it is an ethical imperative. Unjustified deviations mid-review can introduce reporting bias and compromise the trustworthiness of the evidence synthesis [1, 6, 7]. In ophthalmology, transparent and faithful protocol adherence has had tangible implications. For example, a well-conducted SRMA by the Cochrane Eyes and Vision Group comparing anti vascular growth factor (anti-VEGF) agents for neovascular age-related macular degeneration (nAMD) helped clarify that while bevacizumab (off-label) and ranibizumab (on-label) had comparable efficacy in

visual acuity outcomes, bevacizumab was significantly more cost-effective. This contributed to broader acceptance of bevacizumab use in clinical practice and influenced policy decisions across several healthcare systems. Without strict adherence to pre-specified protocols and transparent methodology, such impactful conclusions might have been undermined by bias or methodological ambiguity [8].

Equally important is the principle of accountability and methodological rigor. Authors bear the responsibility of ensuring that their work is accurate, robust, and replicable. This entails applying validated techniques such as duplicate study selection, independent data extraction, and thorough quality assessment of included studies. Detailed documentation is necessary to allow external researchers to reproduce the methods and verify the results independently [1]. In a field like ophthalmology, where nuanced clinical trials on retinal implants or corneal transplantation inform practice, the reproducibility of findings is both a scientific and ethical necessity. For instance, the landmark randomized controlled trial by Kass et al. in 2002 [9], known as the Ocular Hypertension Treatment Study (OHTS), demonstrated that treating patients with elevated intraocular pressure significantly reduced their risk of developing primary open-angle glaucoma, especially among those with identifiable high-risk features such as thinner central corneal thickness or older age [9]. This foundational trial was later incorporated into a 2005 Cochrane systematic review and meta-analysis by Maier et al. [10], which synthesized multiple high-quality Randomized Controlled Trials (RCTs) to confirm the protective effect of intraocular pressure-lowering treatments in ocular hypertension [10]. Owing to its methodological rigor, transparent data extraction, and formal risk-of-bias assessment, the Cochrane review provided a stronger evidence base for guideline updates. It helped shift ophthalmic practice toward a risk-stratified approach, where treatment is selectively offered to patients with ocular hypertension based on individual risk factors, rather than adopting a uniform observational strategy.

Integrity and intellectual honesty are also indispensable. Authors of SRMAs must avoid all forms of research misconduct, including plagiarism, salami slicing, and unjustified duplicate publication. Proper citation of original studies respects intellectual property and acknowledges the foundation on which current analyses are built. Furthermore, transparency in authorship is essential. All listed authors should meet the established authorship criteria as per the International Committee of Medical Journal Editors (ICMJE) guidelines, and unethical practices such as ghost or honorary authorship must be avoided [6, 7]. These standards are not mere academic formalities, they reflect an ethical obligation to credit meaningful contributions and maintain accountability for the content presented.

Finally, authors of SRMAs must actively avoid or manage conflicts of interest. Financial or personal conflicts can subtly influence how studies are selected, interpreted, or presented. Ideally, review teams should be free from significant conflicts; when this is not possible, full disclosure is mandatory. For instance, Cochrane reviews strictly regulate participation by individuals with strong commercial ties to ensure objectivity [6, 7]. Disclosure of funding sources and competing interests enables readers to critically assess the reliability of the findings. In ophthalmology, where industry involvement in research is widespread, particularly in areas like cataract surgery devices or novel biologics, transparency in conflict management is vital to uphold the ethical principle of impartiality. A notable example involves systematic reviews comparing anti-VEGF intravitreal injections. Some early reviews funded by pharmaceutical companies showed a tendency to favor ranibizumab, the more expensive on-label agent, despite multiple independent reviews, including Cochrane analyses, concluding that bevacizumab offered comparable visual outcomes at a fraction of the cost. The discrepancies between commercially sponsored and independent reviews highlighted how undeclared or poorly managed conflicts of interest can skew interpretation, with direct implications for clinical decision-making and healthcare costs [8].

Together, these core principles create the ethical scaffolding upon which trustworthy, high-impact SRMAs are built. Upholding them ensures that SRMAs in ophthalmology not only inform clinical decisions but also do so with integrity, transparency, and respect for the broader research ecosystem.

Recurring Ethical Issues in Ophthalmology

Despite ophthalmology's growing embrace of evidence-based practice, several recurring ethical challenges threaten the integrity of its research landscape. These include selective reporting and publication bias, data duplication and plagiarism, authorship misconduct, undisclosed conflicts of interest, redundant or poorly conducted SRMAs, and research misconduct. Each issue carries implications not only for scholarly integrity but also for clinical decision-making and patient outcomes [11].

Selective Reporting and Publication Bias

Sponsor pressure, and that favorable outcomes may be selectively reported. This distorts the evidence base, inflating perceptions of treatment efficacy while underreporting risks. Over time, such bias can mislead practitioners, potentially resulting in overtreatment or misplaced confidence in emerging therapies. To address this, mandatory trial registration and public results reporting should be strictly enforced to ensure transparency and accountability. Regulatory bodies and journals should require full disclosure of funding sources, protocols, and outcome measures, with deviations clearly justified. Independent data monitoring committees and open-access repositories for raw trial data can further enhance scrutiny and allow for external validation of findings. Ultimately, fostering a culture of openness and ethical integrity in clinical research is essential to preserve scientific credibility and safeguard patient care.

Selective reporting, particularly publication bias, occurs when studies with favorable or statistically significant results are more likely to be published than those with null or negative findings. This skews the available evidence toward overly optimistic conclusions. In ophthalmology, this “black hole” between research conducted and research published has been well documented. For instance, a review of AMD trials registered on ClinicalTrials.gov found that only 54% of 64 completed studies were eventually published. Industry-sponsored trials had a slightly lower publication rate (52%) compared to non-industry trials (58%), and early-phase trials were less likely to be published than later-phase trials [12]. This indicates that nearly half of important ophthalmic data may remain inaccessible to clinicians. Editorials in the American Journal of Ophthalmology have cautioned that negative findings are often suppressed due to porting via platforms like ClinicalTrials.gov have been implemented to improve transparency and reduce publication bias [11, 12].

Data Duplication and Plagiarism

Another major concern is data duplication and plagiarism. Duplicate publication, where the same data are republished across multiple articles without justification, can mislead readers and artificially inflate the perceived strength of evidence in meta-analyses. Plagiarism, the uncredited use of another’s work, similarly undermines scientific credibility. A 2021 study of retracted articles in ophthalmology journals from 1994 to 2019 found that 17% were retracted due to plagiarism and 12% due to duplicate publication [13]. Collectively, these issues accounted for nearly one-third of retractions in the field. Journal editors have reported encountering submissions that reuse text, figures, or entire datasets without proper attribution. In response, ophthalmology journals have implemented plagiarism-detection software and have updated their editorial policies to explicitly prohibit duplicate submissions. Furthermore, editorials in a few journals have emphasized that maintaining research originality is a fundamental ethical responsibility, warning that plagiarism is "the mortal enemy" of scientific progress [14].

Authorship Ethics (Ghost and Honorary Authorship)

Authorship misconduct, specifically ghost and honorary authorship, is another widespread issue. Honorary authorship refers to listing someone who did not meet criteria for authorship, often to curry favor or recognize institutional status. Ghost authorship involves omitting contributors, such as junior researchers or unacknowledged medical writers, who played a substantial role in the work. Both violate the ICMJE authorship guidelines and distort accountability. A survey of corresponding authors from Ophthalmology, Journal of the American Medical Association ophthalmology (JAMA Ophthalmology), and American journal of ophthalmology (AJO) revealed that over 50% had included at least one honorary author on their paper, while 16% admitted to ghost authorship [15]. Alarmingly, 12% of respondents acknowledged both practices in the same manuscript. These findings highlight a systemic problem in ophthalmology publishing. Such practices dilute responsibility; give undue credit, and obscure contributions, sometimes even hiding industry influence if medical writers from sponsors are not disclosed. Journals have responded by enforcing author contribution statements and requiring authors to detail their specific roles, yet the persistence of these practices suggests the need for stronger enforcement and educational initiatives [15].

Redundant or Unnecessary Systematic Reviews and Meta-Analyses

While SRMAs are considered high-level evidence, the surge in their publication has raised ethical concerns about redundancy and quality. Many SRMAs now overlap in scope, re-analyzing the same pool of studies with minor

methodological variations, creating confusion and research waste [16]. A bibliometric analysis revealed a 21% annual increase in ophthalmology SRMAs, with retina and glaucoma topics leading the trend [17]. Renowned meta-researcher John Ioannidis [16] has criticized this "mass production" of SRMAs, stating that many are created more for academic output than to fill genuine evidence gaps. Ophthalmology is not exempt [16]. Topics like diabetic retinopathy treatments or cataract techniques often see multiple reviews with overlapping data, leading to inconsistent conclusions. Additionally, some reviews are poorly conducted, failing to register protocols, including retracted or low-quality studies, or skipping bias assessments. One British medical journal (BMJ [Clinical research ed.]) investigation found that a median of 16.7% of trials in some meta-analyses had been retracted, yet remained included in published SRMAs. Such oversights misinform clinicians and erode the credibility of evidence synthesis. Journals are beginning to respond by requiring adherence to PRISMA guidelines and demanding justification for new reviews. Nonetheless, researchers must take ethical responsibility to ensure their SRMAs are necessary, well-conducted, and contribute meaningfully to the field [16, 18].

Conflict of Interest

Conflicts of interest (COIs), particularly financial ties to industry, can subtly influence research design, interpretation, and reporting. Funding bias, where industry-sponsored studies disproportionately report favorable outcomes, is a well-known phenomenon [11]. In ophthalmology, COIs are especially prevalent given the specialty's close relationship with pharmaceutical and device companies. Studies have found a significant association between industry sponsorship and pro-industry conclusions in ophthalmic research [11]. At times, sponsors have delayed or suppressed the publication of unfavorable findings [11]. This bias can create an unbalanced picture of treatment efficacy, especially when studies of new anti-VEGF agents or surgical technologies selectively highlight positive outcomes. A 2023 analysis comparing self-reported COIs in ophthalmology publications with the U.S. Open Payments Database found that 63% of authors failed to disclose payments they had received from industry [19]. Only 1% fully disclosed all payments. This underreporting raises serious concerns about transparency and objectivity [19]. To combat this, journals and organizations like Association for Research in Vision and Ophthalmology (ARVO), American Academy of Ophthalmology (AAO), and Medical Hypothesis Discovery and Innovation in Ophthalmology have implemented stricter COI disclosure requirements, with some journals cross-referencing author declarations against independent databases. Ethically, researchers are obligated to disclose all relevant financial relationships, ensuring that readers can interpret findings with appropriate scrutiny.

Research Misconduct (Fabrication and Falsification)

The most serious ethical violations, data fabrication and falsification, are thankfully rare, but their consequences are severe. These forms of misconduct generate fraudulent data that can mislead clinical care and erode trust in the scientific enterprise. In ophthalmology, a 2021 study in the journal of Eye (London, England) reported that 26.5% of retractions were due to fabrication or falsification, making it the single most common reason for retraction [13]. A more recent 2024 analysis echoed these findings, reporting that data falsification was responsible for 38% of ophthalmic retractions, reinforcing the persistent risk posed by such misconduct [20]. In response, journals have adopted image analysis tools and statistical anomaly detectors to screen for potential fraud. When detected, the response is swift: articles are retracted, institutions launch investigations, and researchers may face reputational and professional consequences. Ethically, the expectation is zero tolerance. Fabrication and falsification not only compromise the scientific record but can also cause direct harm when false evidence shapes treatment decisions. Fostering a research culture grounded in mentorship, transparency, and ethical rigor is essential to prevent such egregious breaches.

Collectively, these recurring ethical issues reveal systemic vulnerabilities in how evidence is generated, synthesized, and disseminated in ophthalmology. While many SRMAs strive for methodological rigor and transparency, the persistence of bias, misconduct, and oversight failures threatens to erode trust in what should be the highest tier of evidence. These issues are not merely academic, they carry direct clinical implications, influencing diagnostic pathways, treatment recommendations, and ultimately, patient outcomes. Addressing them requires more than individual vigilance; it calls for structural solutions rooted in clear ethical frameworks, robust reporting standards, and enforceable publication practices. The following section outlines the key guidelines and best practices currently available to uphold ethical integrity in ophthalmic SRMAs and mitigate

the risks posed by these recurring challenges.

Recommendations

1. Research Protocol Registration

One of the simplest yet most important steps for maintaining ethical integrity in SRMAs is registering the research protocol before beginning data collection. Registries like PROSPERO [21] provide a public platform to outline the research question, objectives, inclusion and exclusion criteria, search strategies, databases, and planned analyses [22]. Protocol registration enhances research transparency, reduces duplication, and improves overall quality [23, 24]. Tawfik et al., reported that 44.6% of surveyed authors did not register their protocols, often due to unawareness of its importance or fears of idea theft [25]. While not always mandated by journals [26], funding bodies such as the National Institute for Health Research (NIHR) and Canadian Institutes of Health Research (CIHR) require it [22, 27]. In ophthalmology, protocol registration increased from 9% in 2017 to about 20% in 2023 [28], but still suboptimal compared to other fields [17].

2. Avoid Selection and Publication Bias

Authors should conduct a comprehensive literature search covering multiple databases without language restrictions and including grey literature and not rely solely on high-impact journals to avoid selection bias [29]. Data extraction should be performed independently by at least two authors as it helps detecting discrepancies and reducing errors [24]. Predefining outcomes and inclusion/exclusion criteria before examining study results further prevents selective reporting, a form of bias highlighted in the Cochrane review [30], which found that statistically significant outcomes are often preferentially reported. This skews the available evidence, leading to overestimation of treatment effects [31]. Authors should be aware of publication bias and can use many statistical methods to detect it. The most commonly used ones are funnel plots, looking for symmetrical data, Egger's regression test, aim for statistically insignificant value and trim-and-fill methods. Authors should aim to openly report their publication bias results [29]. The aim is not only to report absence of publication bias but to understand the nature of the data.

3. Risk of Bias Assessment

After selection, comes the assessment of studies included. This helps in assessing the quality of studies and their risk of bias. Conducting a structured critical appraisal using validated tools can be of a help, Cochrane Risk of Bias 2.0 (RoB 2) can be used for RCTs, Risk Of Bias In Non-randomised Studies - of Interventions (ROBINS-I) for non-Randomized Studies, and MeaSurement Tool to Assess systematic Reviews (AMSTAR 2) for Systematic Reviews. JBI global [32] also offers a wide variety of checklists that can be used to assess the quality of papers with different study designs.

The Committee on Publication Ethics (COPE) guidelines [33] can help authors to start their journey in understanding and maintaining ethical research conduct and transparency [24]. If authors have faced ethically insufficient research papers, they either contact the author to provide further details on ethical considerations, or they should clearly state that the included studies in their review include ethically insufficient papers. Authors should be honest and communicate ethical issues with the reader, ensuring transparency [29]. It is also advised that authors of SRMAs include in their manuscript a brief reporting of ethical assessment of original studies [29].

Original articles are of ethical and methodological quality variation, which in turn affects the SRMA produced [34]. If authors are not ethically vigilant, SRMA can easily disseminate unethical research. A study that examined the bias in published surgical glaucoma clinical trials and their registration showed that 63% of glaucoma surgical RCTs were unregistered, which violates ethical norms that encourage protocol registration. SRMAs depend on complete and accurate data; if trials aren't registered, it becomes difficult to verify whether outcomes were pre-specified or selectively reported, which breach the ethical and scientific integrity of the evidence base [35]. Furthermore, the study showed that 37% of registered trials had discrepancies between registered and published primary outcomes [35]. This outcome reporting bias can skew meta-analytic results, particularly if outcomes that showed no benefit were silently switched or omitted. This results in inflated effect sizes and misleading conclusions. Similarly, earlier studies [36, 37] showed poor reporting standards in ophthalmic RCTs, with suboptimal adherence to Consolidated Standards of Reporting Trials (CONSORT) guidelines. A review of 39

SRMAs on refractive errors revealed that the majority were of poor quality, with frequent problems of incomplete literature searches (44%), failure to assess bias (26%), and unclear criteria for selecting studies (13%) [38].

4. Avoid Duplicate Data

Duplicates in meta-analyses can overstate interventions' effects. Tramer et al. [39] analysis revealed a high proportion of duplicated patient data, which were more likely to report greater treatment effects, thus distorting meta-analytic results. Authors must carefully identify and exclude duplicate data to avoid biased conclusions [39].

5. Follow PRISMA/MOOSE Guidelines

SRMAs authors are expected to follow appropriate reporting guidelines, for example, PRISMA for systematic reviews of RCTs [40, 41] and Meta-analysis Of Observational Studies in Epidemiology (MOOSE) for systematic reviews of observational studies [26, 42]. Although these reporting guidelines do not contain specific items for ethical assessment of included studies, they still help in enhancing transparency and ensure replicability [34].

A study in 2017 showed that 10% of review articles in the field of ophthalmology failed to achieve a PRISMA compliance rate higher than 30%, and no single article met all 27 PRISMA criteria. Journal enforcement in adhering to PRISMA was also weak, as only 1 out of 5 ophthalmology journals reviewed mandates PRISMA [28]. This displays an ethical gap, if systematic reviews are not transparent or rigorous, they could mislead clinicians and clinical decision making. Following PRISMA reporting guidelines is not just about format, it is about doing science responsibly and ethically.

While PRISMA provides a solid foundation for reporting SRs, it lacks field-specific adaptations. In ophthalmology, for example, many studies collect data from both eyes, but PRISMA does not offer guidance on how to report or analyze such cases, especially when the eye, not the patient, is the main unit of analysis [28]. This can lead to confusion if it is unclear whether the data come from one or both eyes, or which eye is actually being reported. Such ambiguity can raise ethical concerns about the accuracy and transparency of the review. That is why it is important not only to follow PRISMA but also to recognize where it falls short and push for ophthalmology-specific guidelines that help researchers handle these challenges more clearly and ethically.

6. Avoid Plagiarism

SRMAs rely heavily on referencing and citing existing studies, making no proper citation possible [24]. Authors should always write in their own words and give full credit to original sources, a key to maintaining academic integrity. However, there is an exception. In Cochrane reviews, it is acceptable to reuse previous writings in updated reviews, without it being considered plagiarism or redundant publication. Moreover, introductory sections may be reused across reviews for clarity and accessibility, especially if previously well-written, but only when done transparently and with approval from the review group [24]. The bottom line is that reuse must be acknowledged, limited, and handled responsibly to avoid plagiarism.

7. Grading of Recommendations, Assessment, Development, and Evaluation

When conducting SRMAs, it is important to assess the strength of your conclusions. The Grading of Recommendations, Assessment, Development, and Evaluation (GRADE) approach helps by evaluating how confident you can be in your results, and recommendations based on the quality and consistency of the included studies [43]. Alongside this, authors should practice reflexivity, being mindful of how their own perspectives, experiences, or goals might influence decisions about study selection and data interpretation. Recognizing and reflecting on these biases adds transparency and strengthens the credibility of the review [29].

8. Credit Authorship Appropriately

Proper authorship credit is essential to maintain transparency and fairness in SRMAs. Teams should agree early on authorship roles to avoid issues like ghost or guest authorship. Following established guidelines such as the ICMJE criteria, defines who qualifies as an author based on their contributions, drafting or revising the work, approval of the final version, and accountability [24, 44]. In Cochrane Reviews, documenting each author's specific contribution is now mandatory, ensuring accountability and fairness [24]. A 2017 commentary emphasized that the trustworthiness of SRMAs depends on clear disclosure of who is involved, the reasons behind the review, and potential conflicts or biases. It also highlighted the importance of transparency around who originated the review

question and whether those individuals participate in answering it [45]. Additionally, analysis of 195 reviews registered in PROSPERO revealed that final publications often list more authors than initially registered, raising concerns about authorship inflation and its implications [46]. These findings necessitate the clear upfront agreements and ongoing transparency regarding authorship throughout the review process.

9. Avoid Duplicate Publication

Authors should avoid publishing the same SRMAs in multiple journals, as doing so without proper disclosure breaches ethical standards of originality and transparency. Duplicate publication can result in slightly different versions appearing across journals, due to editorial changes, which may confuse readers and distort the research record [24]. However, an exception is made for Cochrane Reviews, which may be co-published in other journals under strict conditions. Journals like Ophthalmology allow Cochrane systematic reviews co-publication if authors clearly disclose the review's original source and intent. Authors must inform the editorial office at the time of submission and explicitly reference the Cochrane version in their manuscript to maintain transparency and avoid ethical concerns [26]. Following such guidance ensures integrity in the dissemination of SRMA findings.

10. Declare any Conflict of Interest

In SRMAs, especially within ophthalmology where collaborations with the pharmaceutical and medical devices industry are common, authors must proactively disclose any COIs. This includes financial, personal, political, or academic interests that could potentially influence the research, even if the authors believe they are unaffected [24]. Transparency in COI reporting is important to endorse the integrity of the review and maintain trust in the scientific process. Recent research comparing self-reported COIs by ophthalmology authors to industry-reported data suggests that journals should require full disclosure of all relationships, rather than relying on authors to judge relevance. A standardized, clear guideline across journals, supported by education and enforcement, would improve COI transparency and consistency [19].

CONCLUSIONS

Ethical vigilance is required throughout all stages of SRMA development, from team formation to submission. Registering protocols and adhering to them reduces bias and duplication, while full disclosure of COI is necessary to maintain impartiality. Although SRMAs rely on secondary data and do not involve direct patient consent, ethical concerns remain important throughout study selection, data extraction, reporting, and submission. Transparent application of inclusion criteria and assessment of publication bias are key to ensuring integrity. PRISMA and MOOSE reporting guidelines are essential for making SRMAs replicable and transparent. Developing ophthalmology-specific reporting guidelines may further improve clarity and consistency. All of this is driven by the need to maintain ethical standards in SRMAs as a reliable and trustworthy source of evidence for clinical care and health policy, rather than one that is flawed or misleading.

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