

Young Minds, Rare Finds, and the Path to Publish Case Reports

Aishwarya A. Pashine¹ , Waqar M. Naqvi^{2,3*} , Sakshi P. Arora³ 

¹Department of Cardiovascular and Respiratory Physiotherapy, Career College, Bhopal, India.

²Department of Physiotherapy, College of Health Sciences, Gulf Medical University, Ajman, UAE.

³Faculty of Interdisciplinary Sciences, Datta Meghe Institute of Higher Education and Research, Wardha, India.

Received: 2024-04-12

Accepted: 2024-04-26

Published Online: 2024-04-27

Corresponding Author

Waqar M. Naqvi, PhD,

Address: Department of Physiotherapy,
College of Health Sciences, Gulf Medical
University, Ajman, UAE.

E-mail: dr.waqar@gmu.ac.ae

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Abstract

A case report (CR) is a type of medical literature that demonstrates the scientific documentation of a rare disease/phenomenon, an unusual presentation of common diseases, or an innovative treatment for the disease. CRs can serve as an impetus for further research, prompting investigators to explore the potential associations, mechanisms, or therapeutic interventions suggested by individual case observations. However, emerging researchers often encounter various challenges while documenting CRs for publication, including limited experience, difficulty navigating relevant literature, ethical considerations, and publication barriers. This article focuses on empowering emerging researchers for the medical writing of CRs by providing a roadmap from observation to publication in a minimum duration, along with the implication of artificial intelligence (AI) in CR writing, highlighting AI's potential to streamline drafting processes while addressing technical limitations, biases, and ethical concerns associated with its use. Thus, equipping emerging researchers with the necessary tools and resources, fostering confidence and competence by demystifying the CR writing process, and empowering aspiring authors to contribute meaningfully to the scientific literature.

Keywords: Case report, CARE Guidelines, Medical Writing, CARE Extension, Research Publication, Single-subject research, health sciences

Dear Editor,

Medical writing of case reports (CRs) represents the foundation of the hierarchy of the evidence and serves as a beneficial exercise in learning how to write scientifically due to the similarity of the basic methodology. Congruently CRs reflect the pioneering effort for healthcare professionals to get articles published in medical journals [1]. A CR provides an elaborative description of a patient's unique clinical presentation, diagnosis, treatment, and follow-up care. The history of CRs can be traced back to

Hippocrates providing description of scientific information regarding disease which can be overlooked in various types of clinical trials [2].

CRs play a crucial role in the generation and testing of hypotheses. They can serve as the impetus for further research, prompting investigators to explore potential associations, mechanisms, or therapeutic interventions suggested by individual case observations. They serve as educational tools for students, residents, and practicing clinicians, facilitating

the dissemination of knowledge and the development of clinical acumen [3]. CRs are outcome-oriented exercises, as emerging researchers evaluate patients, document positive findings, and are encouraged to disseminate these findings through publication. This method not only improves comprehension of practical scenarios but also highlights the development of innovative strategies and the broadening of knowledge within the field through published case studies [4].

Medical writing of CRs requires presentation of the clinical findings in a clear, concise, and scientific manner. This synergy of artistic and research skills are essential for career advancement which can only be achieved through consistent publication of CRs, as it provides practical experience in conducting literature reviews, data analysis, and manuscript writing. In addition, the publication of CRs early in the career can enhance popularity and recognition in the scientific community as a researcher, expert, or a clinician related to a specific field. It motivates individuals to highlight their research skills, clinical expertise, and accomplishments offered towards the medical education. Additionally, it facilitates access for participation in conferences, associated projects, and interdisciplinary research collaborations, all of which are crucial for career advancement and professional growth fostering collaborations with peers, experts, and mentors leading to networking opportunities [5,6]. However, emerging researchers may encounter various challenges during the implementation of CR writing which commonly include accessing of appropriate literature, issues related to ethical considerations, inadequate experience, and publication barriers. These challenges can be addressed by providing the techniques for literature review, including ethical principles, emphasizing key considerations, and guidelines for manuscript formatting to ensure the quality and integrity of CRs. Moreover, practical tips and strategies from formulating a research question to navigating the publication process is essential for boosting competence and confidence by organizing and simplifying the process of CR writing and influencing researchers to offer significant contributions to the scientific literature [3,7]. The subsequent sections provide comprehensive guidance and practical advice along with the recommendations to assist emerging researchers at each stage of the CR writing process.

Emphasizing the Purpose

While writing a medical CR, it is important to determine whether the case aims to highlight a rare or uncommon condition

or to describe a novel treatment approach. Additional common reasons for publishing CRs involve the description of an unexpected correlation between symptoms or diseases, unusual or uncommon features of a disease, variations in anatomical structures, novel insights into the pathophysiology or side effects of a disease, an unexpected event during patient observation or treatment, and innovative therapeutic approaches. Many journals publish CRs that describe uncommon observations, adverse reactions to therapies, queries regarding established theories, demonstration of new theories, unique combinations of conditions causing confusion, and personal impacts [8]. Therefore, a clear purpose guides the content and structure of the CR.

Framework for Composition

Enhancing the Quality and Transparency Of Health Research (EQUATOR) network provides guidelines for CR documentation for various healthcare professions consisting of CAsE REport (CARE) guidelines, Surgical CAsE REport (SCARE), HOMEopathic clinical CAsE reports (HOM-CASE), and CARE guidelines adapted for Therapeutic Massage and Bodywork (TMB) case reports. Similarly, CARE-radiology has been developed for reporting radiology-related CRs [9] and an extension of CARE guidelines for PHYsiotherapy CAsE REports (PhyCaRe) is currently under development [10]. Most of the CRs follow a standard structure, including a title, an abstract, an introduction, a case presentation, a discussion, and a conclusion section while according to the journal guidelines, some may demonstrate a literature review [8]. Whereas, a universally accepted recommended strategy to write a manuscript begins with methodology, followed by results, introduction, discussion, conclusion, title, and abstract sections which can be inculcated for drafting of the CRs [11]. Therefore, for writing the CRs the sequence should be the case presentation section, followed by the introduction, discussion, conclusion, title, and abstract sections. However, while publishing, the CR can be arranged into the standard structure as most of the journals adhere to these guidelines for quality and presentation and follow CARE guidelines [8,12].

Before initiating the writing of the CR, it is essential to obtain informed consent from the patient or the patient's legal guardian as it is required by all the journals during the CR submission. This ensures that the patient is informed of how their personal information including images will be used and allows the patient to opt out of the publication process. The patient must be

competent and should not be forced into giving their informed consent [8].

Following this, gathering of all the relevant information and drafting of the CR should be commenced which includes detailed medical history of the patient, physical examination findings, diagnostic assessment, treatment plan, and records related to follow-up visits along with the images associated with the case for adequate and accurate documentation of the patient's care. However, it should be taken into consideration that the medical notes disappear after the patient is discharged and are generally difficult to retrieve [13].

The title should be a clear and short description of the case focusing primarily on the diagnosis or the novel intervention and should mention the word "case report" [2,14]. The abstract part should be a concise and condensed summary of the CR that incorporates the key components of the main text [2,13] and correspondingly, keywords should be included since these terms are essential for easy online retrieval and indexing. Emphasis on the abstract and the title should be made as these sections primarily depend on the other elements of the CR. The introduction section should describe background information on the condition being described and the purpose of the CR, followed by the case presentation section which can be further segregated into various subheadings that encompass patient information, physical or clinical examination, timeline, diagnostic investigations, differential diagnosis, therapeutic intervention, follow-up, and outcomes. This should be supported with appropriate images consisting of patient photographs, radiographic images, or diagrams of diagnostic and therapeutic interventions as it can help to illustrate the key findings. To prevent errors during submission and publication, the photographs should be of excellent quality and resolution. The discussion section should compare and contrast the CR with the published literature and briefly summarize with contemporary references. Additionally, to ensure validity, uniqueness, and accuracy it should inculcate insights into the diagnosis, treatment, and outcome. Moreover, it should signify why this CR is important for the medical community and its implication on current clinical practice along with the limitations and future applications. Lastly, the conclusion section should summarize how the CR contributes to the medical literature highlighting the learning points or take away lessons [2].

The patient perspective section is optional and varies from

journal to journal. However, it should be included, as this section provides an opportunity for patients to describe the case from their perspective. The patient is encouraged to elaborate on their symptoms, explain what initiated seeking medical advice, how effective the therapeutic intervention is, and how the issue reflects in the current situation. However, the section should not include identifying information. The patient perspective is important as it contributes to medical education and clinical decision-making [2].

The reference section should cite relevant literature adhering to the journal's referencing style guidelines. Ensure accuracy and currency of references (referring to last five years), prioritizing primary sources and influential works where applicable. Generally, the standard recommendation is of 15 references for CRs; however, journals may accept submissions with more references, specifically, if there is an extended literature review [2].

After writing and structuring the initial draft, seek peer feedback from colleagues, mentors, or an experienced editor to ensure scientific integrity, accuracy, and clarity. Following this, before proceeding for submission all the remarks and recommendations should be addressed for improvisation of the CR [3].

Augmenting Artificial Intelligence

Artificial intelligence (AI) technologies utilize advanced algorithms, natural language processing (NLP), and machine learning techniques to assist researchers and clinicians at different phases of CR writing by offering automated literature searches along with extraction of the data to organised manuscript drafting and real-time feedback. Thus, revolutionizing the field of medical writing by providing innovative methods for optimizing the process of CR drafting more quickly and efficiently.

Additionally, these technologies are scalable and adaptable to different research settings and disciplines, making them useful in various types of clinical specializations and research fields. However, by integrating patient-specific data, AI technologies may further assist clinicians in modifying interventions according to the unique characteristics and needs of each patient, thereby improving outcomes and patient satisfaction. Moreover, these tools may provide paraphrasing suggestions, grammar corrections, and automated templates to improve coherence and clarity. As a result, in accordance with the publication

requirements of the peer-reviewed journals, AI technologies empower emerging researchers to produce high-quality CRs [15–17].

However, AI tools exhibit certain technical challenges. These include biased data quality, specific knowledge gaps related to the context of the CR, and clinical reasoning issues, leading to misinterpreted or inaccurate conclusions. Similarly, it could result in a decrease in analytical or critical thinking of the researchers due to over-dependency on AI tools as there is a risk that the researchers may get acquainted and accept the results which are AI-generated without verifying their accuracy. Moreover, the researchers must ensure that the application of AI in CR writing aligns with ethical guidelines and regulations governing protected health information and the use of patient data which involve informed consent, patient confidentiality, and data privacy. Additionally, the researchers must carefully examine the universality and applicability of AI-generated outcomes to different populations and contexts as AI algorithms trained on specific datasets or populations may lack generalizability to other settings or patient populations. Furthermore, AI tools should be retrained routinely as most of them are not updated frequently with the most recent information [16,18].

To summarize, it is crucial to strike a balance between the integration of AI's potential and appreciating the significance of critical thinking, ethical issues, and human creativity. However, patient well-being, integrity of medical information, and the overall enhancement of healthcare practices must be carefully considered and prioritized. By implementing this, emerging researchers can benefit from AI while maintaining the highest quality of medical writing and patient care.

Navigating for Publication

Once the CR has been edited and amended, it is ready to be submitted to a medical journal for publication. Prior to submission, the CR should be formatted according to the author's guidelines which should be thoroughly checked for the respective journal. In recent times, many journals dedicated only to publishing CRs have been launched. However, for publication of the CRs, it is important to focus on journals involving universally accepted databases.

Before submitting, ensure that the journal has clear peer review guidelines, the publisher is easily identified and can be contacted, the journal's website is updated and the latest articles are easily

accessible as these elements are important to avoid predatory journals. Additionally, to inspect the current indexing of the journal the researchers should verify both the journal and the database. Furthermore, open-access journals are recommended for publication since readers can easily access the CR. However, high publication cost presents a challenge for researchers from low-income countries, although depending on the country, majority of the journals offer waivers and discounts [19–21].

Regards,

Disclosure: No financial support was provided to conduct this study

Conflict of Interest: The authors do not have any competing interests.

Author's Contribution: The final manuscript was reviewed and approved by all the authors.

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How to Cite;

Pashine AA, Naqvi W.M, Arora S.P. (2024) Young Minds, Rare Finds, and the Path to Publish Case Reports. Eur J Ther. 30(3):395-399. <https://doi.org/10.58600/eurjther2138>