



SPECIAL ARTICLE

Ten questions you should consider before submitting an article to a scientific journal[☆]



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Abstract Investigating involves not only knowing the research methods and designs; it involves knowing the strategies for disseminating and publishing the results in scientific journals. An investigation is considered complete when it is published and is disclosed to the scientific community. The publication of a manuscript is not simple, since it involves examination by a rigorous editorial process evaluator to ensure the scientific quality of the proposal. The objective of this article is to communicate to potential authors the main errors or deficiencies that typically and routinely explain the decision by the referees of scientific journals not to accept a scientific article. Based on the experience of the authors as referees of national and international journals in the field of nursing and health sciences, we have identified a total of 10 types or groups, which cover formulation errors, inconsistencies between different parts of the text, lack of structuring, imprecise language, information gaps, and the detection of relevant inaccuracies. The identification and analysis of these issues enables their prevention, and is of great use to future researchers in the dissemination of the results of their work to the scientific community. In short, the best publishing strategy is one that ensures the scientific quality of the work and spares no effort in avoiding the errors or deficiencies that referees routinely detect in the articles they evaluate.

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PALABRAS CLAVE

Metodología de la investigación
enfermera;
Prevención

Diez cuestiones que debería considerar antes de enviar un artículo a una revista científica

Resumen Investigar implica no solo conocer los métodos y diseños de investigación, sino que comporta comprender las estrategias para la difusión y publicación de los resultados en las revistas científicas. Se considera que una investigación termina cuando está publicada y es divulgada entre la comunidad científica. La publicación de un manuscrito no es sencilla, puesto que conlleva pasar por un riguroso proceso editorial evaluador para garantizar la calidad científica de dicha propuesta. El objetivo de este artículo es comunicar a los autores potenciales los principales errores o deficiencias que normalmente y de forma general justifican la decisión de no aceptar un artículo científico por parte de los revisores de revistas científicas. A partir de la experiencia de las autoras como revisoras de revistas nacionales e internacionales del ámbito de la enfermería y las ciencias de la salud, se identifican un total de 10 tipos o grupos, que versan sobre los errores de formulación, las incongruencias entre diferentes partes del texto, la falta de estructuración, un lenguaje poco preciso, las lagunas respecto a información y la detección de imprecisiones relevantes. La identificación y el análisis de estas cuestiones permiten prevenirlas, siendo de gran utilidad a los futuros investigadores a la hora de difundir los resultados de sus trabajos a la comunidad científica. En definitiva, la mejor estrategia de difusión es aquella que asegura la calidad científica del trabajo y que no escatima esfuerzos para prevenir dichos errores o deficiencias que los revisores suelen detectar en los artículos evaluados.

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The scientific production of Spanish nurses, in both national and international journals, has increased exponentially in recent years. The reforms that started at the beginning of 2000 when our university system entered the European Higher Education Area, and the consequent access to university master's degrees and doctorate programmes, opened new routes for nurses in research training within their own professional discipline.

Nursing science is advancing at a pace; there are increasingly more nurse-led research projects and projects in which nurses participate. These projects are designed from the concept of care and seek to change clinical practice towards positively impacting people's health and the health systems.

A major part of this nursing knowledge generation is based on the dissemination of results. Research requires not only knowledge of the methods and designs of investigation but a mastery of search skills for scientific evidence and its critical analysis, as well as strategies for scientific dissemination and publication. For most scientists, a research study is complete when its results are published and disseminated to the scientific community. The results can then be analysed, contrasted and objectively criticised by colleagues, and evaluated as reasons for changes in clinical practice. A research study may also guide future papers stemming from it. This is the circuit of science and, of course, the circuit of nursing science as well.

Scientific dissemination and publication require specific skills, including being systematic and persistent in practice. One learns through writing and having articles published, but also by having them rejected for publication. The opinion of referees in clarifying issues that were not clear enables the overall article to be improved.

In the specific case of publication and in the interests of scientific quality, journals have a defined process of selection and anonymous evaluation by peers or third parties, chosen by the editor. The process of submitting an article to a journal can often require a great deal of work, desire and patience, because it can take many months from the date it is sent until notification from the editor of whether or not it has been accepted.

In some contexts, such as doctorate programmes, academic careers and accessing financial resources for research, scientific publication is essential, since it is a fundamental requirement to deposit a doctoral thesis, be approved by university quality agencies and to receive funding for teams with a clearly demonstrated capacity for scientific publication.

The objective of this article is to inform potential authors of the main errors or deficiencies that commonly result in referees rejecting a scientific article for a specialist scientific journal. This might be useful to researchers in preventing and duly correcting these errors and deficiencies, and ensure that they are better equipped to present their proposals for publication. We chose 10 points to highlight.

Failing to choose the appropriate journal

Choosing the right journal should be a well-thought-out process that is involved in the publication strategy itself. Everyone who undertakes research dreams of being published in the best scientific journals, usually those of the greatest impact, in order to inform as many professionals as they can of the results of their investigation. However,

many base their selection purely on ranking, quartile score, impact factor or citation indexing,¹ without establishing whether the journal might be interested in the particular subject, either because it features on their website or because they have published articles previously along similar lines. The international journals, whether or not they have impact factor according to the Journal Citation Reports, are interested in publishing papers relevant to their area that are written from an international, not a national, perspective. If you want to be published in these journals it is important for your paper to be replicable in other cultural contexts and that the results are applicable in other countries.² In short, it must appeal to other healthcare contexts. Our main recommendation in this regard is to be honest and examine whether the subject matches the preferences described by the journal; whether it is truly internationally oriented and whether the power or strength of the data match the quality of the journal.

Inconsistencies or formulation errors

There may be inconsistencies or formulation errors in different parts of the manuscript. The title should be brief, clear and explanatory and contain the relevant or key words. We also recommend that it should be appealing and question formats should be avoided.³ It should follow the same lines as the objectives and the results. A common error is to include words such as “impact”, “evidence” or “analysis” in the article, without their being consistent with the objectives and methodologies of quantitative or analytical intervention or exposure. To give an example, the term “impact” should not be used as a synonym for “influence” in the context of a descriptive or qualitative study, but it should be used in an analytical study that offers levels of statistical significance that demonstrate it as such.

The abstract, should preferably be structured, focus on the principal points of the manuscript and not digress from the authors’ intentions. All the journals limit the number of words for this section to between 200 and 350.

Every research paper should contain a question or query that represents a knowledge gap and to set the scene for the issue that it seeks to investigate. This research question usually comes at the end of the introduction and precedes the study objectives. It can be either implicit or explicit and is usually included in qualitative, descriptive and experimental or quasi-experimental studies, in the main. For formulating the research question, the PICO format—*patient, intervention, comparison, outcome*—is recommended for systematic reviews, because the question is structured so as to find scientific evidence for a particular subject on the databases.

The research objectives, included in every design, are fundamental parts that must be consistent with the theoretical framework and research method. Their wording must be clear, precise and complete, since they will guide the data analysis and interpretation of results. Hypotheses are affirmative responses to the question and the research objectives. They become predictions of the relationship between variables, and therefore should be present in analytical designs and are superfluous in descriptive or exploratory designs.⁴ It is not customary to refer to hypotheses in the particular case of qualitative research, but rather

research “assumptions” or “premises”. These assumptions should be prepared based on empirical, theoretical and methodological backgrounds. Furthermore, they must refer to how a particular phenomenon is understood, they are assumptions about something that we do not know and that will be corroborated or otherwise through the investigation. Therefore, their formulation is different to that of quantitative designs, since they do not make predictions about the relationship between variables or aims.

Along these same lines, a hypothesis being absent or wrongly oriented in qualitative studies is a relatively common inconsistency or error. Therefore, we recommend carefully reviewing these sections and, particularly, the consistency between objectives, hypotheses or premises and research design from a technical as well as a grammatical perspective, because terminological accuracy is essential.

Unscientific or inaccurate language

It is well known that scientific language must be precise and accurate, and must highlight what is important. Personalisations, digressions, inaccuracies, colloquialisms, redundant or far-fetched writing should be avoided. Resources should be used to keep the text discursive and avoid running the risk of using too many words to refer to the same thing and thus confuse the referee or potential reader.

For international publications in English or other languages, translation and revision should be undertaken by a professional translation service with experience in scientific publications. Beforehand, the text should be analysed bearing in mind that the grammatical structure and syntax will be different to that of Spanish, which tends to use long and subordinate sentences. Universities, research centres and healthcare centres can usually refer translation services for scientific papers; however there will probably be some financial cost. Unless one of the authors has wide knowledge of the foreign language and previous experience in international publications, it is advisable to use these translation services.

Insufficient or disconnected theoretical framework

The theoretical framework of an article is in the introduction and background section. It should make the subject of the study clear, contain the main ideas duly referenced from a careful review of the literature and should present the theoretical or philosophical premises, that will be consistent with the methodology chosen for the study. It should show the current status of the subject and any questions that have not yet been clarified at a scientific level and those that, theoretically, the article or proposed study seek to answer.

Some of the weaknesses of rejected articles are that their theoretical framework was insufficient or unclear, or that their content was not thematically connected with the interpretation of the results. It is easy to detect whether or not authors have devoted sufficient time to linking the theoretical content with the research question or with the objectives. This will become a problem that will affect the

subsequent development of the discussion and the conclusions, and one that is therefore worth preventing.

Errors in research design or methodology

Errors in research design are perhaps the most common reasons for a proposed article being rejected; they are considered very serious errors. It should be borne in mind that the information in this section must enable its reproducibility; therefore it must be meticulous in detail. There must be consistency between the research question, the objectives and the design of the study. This means that the paper must reflect whether the methodology is quantitative, qualitative or mixed; whether descriptive, analytical, experimental or observational. And in the particular case of qualitative research, the theoretical approach and method must be stated. Each design involves a specific structure that must be followed and which the referee will take into account.

Along these lines, we would recommend seeking the advice of a research expert, or consulting the literature, if applicable, to ensure that the precepts set by each methodology are being followed, and the recommendations for quality and scientific rigour specific to each case.

Gaps in sample selection and ethical access to the sample

The study sample and access criteria are essential elements that form part of the research study and which some papers often disregard. It is important to clarify the people who have participated in the study, the criteria followed for their selection and their level of participation.

All journals, in the descriptions of article sections, dedicate one to ethical aspects, where they frequently refer to authors' compliance with current legislation on data processing and the Declaration of Helsinki recommendations on human research. However, detailed information should also be provided on how access was obtained to the sample, how the information and informed consent was managed, and how the right to anonymity and data confidentiality were maintained. In experimental studies we recommend explaining the interventions that were undertaken in the control group and those that were not in order to demonstrate, even though it might seem obvious, that they were not ignored.

Finally, we recommend including technical data, such as the code and number of the clinical research ethics committee that authorised the research. In many journals, before the manuscript to be reviewed is sent, this data is hidden by a text editing process to ensure the anonymity of the participating institution. However, once accepted it is revealed so that it is explicit in the definitive published version.

Shortcomings in data analysis techniques

Procedures and statistical analysis of data are important elements of the scientific rigour of an article; therefore we recommend that you are explicit when providing this information. There must, obviously, be consistency between

the objectives of research and the tests undertaken, which should be provided clearly, in depth and in detail.

For quantitative studies the variables, categories and tests performed must be detailed, providing the chosen level of significance,⁵ and for observational and experimental studies the effect size should be determined if possible. Carelessness in how data has been handled, organised and tabulated is common, and has a negative impact on referees.

For studies on the validation of instruments, cross-cultural adaptation process or information about the different types of validity and reliability are often ignored. If these issues are not outlined the overall scientific quality of the document is impaired.

On the other hand, for qualitative studies these types of data are analysed as they are obtained.⁶ Therefore the researcher has to be very systematic in organising and storing all the data that has been obtained by means of the various techniques (observation, field notes, interviews, focus groups, documentary sources, etc.).⁷ When describing the analysis techniques you have used you should consider the specific philosophical method of the study (grounded theory, phenomenology, ethnography, etc.). You should explicitly mention that the data has been coded and that the thematic areas have been identified. It is also necessary to mention whether specific programmes have been used for data analysis.

In mixed studies, you should clarify that which corresponds to each methodology. And in any of the abovementioned cases, you should also accurately describe the list of tasks performed by each.

Inaccurate presentation of results

The results must be presented following an order and in detail, and be consistent with the study objectives. It is usually preferable to start with the sociodemographic data of the sample so that the reader can position themselves in the context to interpret the results. This section only requires the description and presentation of the results, not their interpretation, which will come in the discussion section.

A common shortcoming, in addition to presenting data that are not consistent with the objectives, the title or the keywords, is the use of tables to substitute and not to complement text. Therefore you should avoid simply writing up the results as "Sociodemographic data: see Table 3", for example.

It is recommended that you do not use Tables and Figures directly from the statistical programmes; instead you should make them more visually attractive. Forgetting the *n* value or level of statistical significance is more common than one would imagine.

As with the previous sections, we recommend that your strategy should be explicit, clear and concise to prevent gaps and inaccuracies in presenting your results.

Discussion or conclusions that are not well founded

As we mention in our fourth section, a poor or wrongly oriented theoretical framework will have a negative impact on the discussion and conclusion sections because the ref-

ferences to be used to interpret the data obtained are not clear. This issue deserves attention because it can make it impossible to understand the content and therefore result in the rejection of the manuscript.

The discussion section is where the authors make an interpretation and a comparison of their results with what is already known at a scientific level. This exercise also requires authors to structure the discourse in line with the objectives.

Care should be taken when making categorical or forceful statements if you are not providing the appropriate levels of significance or evidence to support them. In a research study, a phenomenon is explored in a specific sample, which means that the results are limited to this sample and the resulting inferential analysis, and so generalisation must be accompanied by reference to other scientific papers that point in the same direction. Therefore, despite researchers' understandable joy when they obtain positive and hopeful data that might transform clinical practice, we recommend that statements such as "this study has demonstrated that X is more effective than Y" should be avoided if there is not the level of significance and effect size to support such a claim. In these cases it is advisable to substitute this sentence for one that better places the findings in the study context, such as "the data shows that X is more effective than Y in the sample studied, and thus new perspectives are opened for..."

Literature citations that are wrongly referenced, out of date and poorly oriented

Unfortunately, errors with regard to references are more common than one might at first imagine. Although incorrect citations occur most often because the authors have little knowledge of the rules of citation and little research experience, using sentences or findings from other people without correctly referencing them can result in a serious risk of plagiarism or unauthorised copying, which is an offence under the Spanish Penal Code. This, along with a lack of truthfulness, is very serious and can result in discrediting not only the research itself but also the authors and the institutions they represent.

Leaving aside the channels and legislation in force to combat plagiarism, we recommend that the ideas and findings of others should be very much respected and used appropriately in your paper by correct and complete bibliographic citation.

Furthermore, authors seeking publication in the scientific journals must demonstrate that they documented their references well when they planned their study. They should demonstrate that they performed a good review of the literature, choosing the most precise keywords possible, based on DeCS or MeSH, well combined using the Booleans provided by the databases. Referees also evaluate papers by the level of accuracy of the references and their use within the discourse.

Study results that are old are frequently referenced without an explanation being offered, such as the fact that it was a benchmark study that involved a change in practice or that their authors researched the phenomenon a long time ago. It is also easily detectable when authors undertake a research

study at a particular time, allow a few years to pass without updating it and then submit it for publication in a journal. You should remember that in the area of the health sciences it is recommended that references should not be more than 5 years old. Although this refers to the validity of treatment and procedures and the scientific validity of clinical practice guidelines.

Once the main issues that authors and researchers should avoid before submitting an article to a scientific journal have been addressed, our recommendation, along the same lines as those of the editors of *ENFERMERÍA INTENSIVA*, is to use the key international guidelines for the quality of research designs: Standards for Quality Improvement Reporting Excellence–SQUIRE, Consolidated Standards of Reporting Trials–CONSORT, Preferred Reporting Items for Systematic Reviews and Meta-Analyses–PRISMA, Strengthening the Reporting of Observational studies in Epidemiology–STROBE, and Consolidated criteria for Reporting Qualitative research–COREQ.

Prior revision of the manuscript can also be very useful, based on critical reading guidelines such as the Critical Appraisal Skills Programme *español*–CASPe–or Joanna Briggs Institute Critical Appraisal Tools. The latter not only serve to analyse and determine the level of scientific evidence found by a researcher, but they also define the gold standard on which editors and referees will base their evaluation of our work.

We did not want to finish without mentioning that there are some exceptions in relation to scientific publications, as in all areas of life, although we would require a separate article to do so. In any case, we consider that the best strategy for disseminating a study is one that ensures the scientific quality of the work presented. You should spare no effort to avoid the principal errors that referees commonly find in the articles we assess.

Furthermore, you should bear in mind that having an article accepted in a scientific journal is always very satisfying, not only for the authors involved, but also for the institution they represent and for the profession in general, because it indicates an advance in nursing science. It is recognition of the work undertaken and the many hours invested to contribute a tiny scientific contribution to an ocean of knowledge.

Finally, the authors of this manuscript want to encourage researchers to disseminate their findings by publishing in scientific journals, but not without examining the main errors they should address before they submit an article for the scrutiny of editors and referees. So, on you go!

Conflict of interests

The authors have no conflict of interest to declare.

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