

## GUIDELINES

# Guidelines for writers and reviewers for submissions to the *SA Orthopaedic Journal (SAOJ)*

J Walters, R Dunn  
Members Editorial Board, SAOJ  
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### Introduction

Over the last few years, as support for the *SAOJ* grows, it has become clear that we must get Medline or Pubmed accreditation in order to keep the growth momentum alive. The former Editor-in-Chief, Prof RP Gräbe, applied on two occasions for Pubmed listing but these attempts failed on both occasions. Although adequate and comprehensive reasons for not meeting with approval were not given, it would seem reasonable to assume that, in the opinion of those adjudicating, the *SAOJ* does not attain the academic standard required for listing in Medline or Pubmed. It is therefore incumbent on us to do what is required to improve the quality of the publications and thereby strive to elevate the intellectual value of the journal.

In order to attain the required international standard it is imperative that potential publications destined for the *SAOJ* must meet with defined minimum criteria. An understanding of these criteria applies equally to those who design and conduct the research projects as it does to those who, as 'peer reviewers' are tasked to judge such work for suitability.

Reviewers play an important role in setting the standard of the journal, and conformity and consistency in the judging process as determined by 'guidelines for assessing acceptability for publication' is probably the most transparent way of achieving this goal.

In order to devise these 'Guidelines to authors and reviewers', a subgroup of the Editorial Board of the *SAOJ* was tasked to produce the framework for these guidelines, as set out below. Papers submitted for consideration for publication must conform to these criteria.

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### Publication types

Most scientific journals will carry a variety of differing submissions. The *SAOJ* has the following sub-categorisation of papers:

1. **Original research**
  - Clinical research
  - Basic science and theoretical research
2. **Review article**
  - A review of a subject with an analysis of published data
3. **Case report**
  - The presentation of unusual or rare cases or cases that carry a useful message, usually contrary to the conventional norm
4. **Letters to the Editor**
  - A forum to raise issues or debate aspects of previously published papers
5. **Expert opinion on published articles**
  - A review of a journal article or cluster of articles dealing with a similar topic for the purpose of conveying a useful message.

### Structure of the paper

#### Clinical research paper

The accepted layout for presenting work should be in accordance with that seen in other internationally accredited journals, namely under the following discrete headings: Abstract, Introduction, Material and methods, Results, Discussion and References.

Information must be presented in the appropriate place. Do not present results or outcomes in the 'Material and methods' section, or discuss outcomes in 'Results', etc.

#### Scientific or Basic science research paper

There is a wide variety of topics and subjects ranging from non-biological, such as physics, mechanical and biomechanical materials to biological research like molecular and genetic studies, cell biology and tissue engineering, etc., that the 'basic sciences' may embrace.

These studies may be laboratory- or workshop-based experiments, some of which may, but mostly would not, require ethical approval.

The paper should be of relevance in the orthopaedic environment and preferably be 'translational' to the clinical setting.

The layout or structure of the paper should follow the same guidelines as proffered for the 'Clinical research' paper.

### Abstract

The 'Abstract' is the most critical part of the paper. It is the part of the paper that will be read most widely and therefore must completely and accurately reflect the message of the research work.

### Key words

The authors should list at least five key words that reflect the contents of the paper so that researchers can accurately locate the publication by on-line or other literature search.

### Introduction

The 'Introduction' should contextualise the study by giving pertinent background information, the rationale for, and a description of the study design. The hypothesis being tested as the goal of the study should be clearly stated.

### Materials and methods

The 'Materials and methods' section must include the following:

- the number of patients/subjects under investigation
- the time period under review
- why this number was chosen
- how the patients were chosen
- inclusion and exclusion criteria
- whether randomisation (with methods) was applied
- if case controlled, how the controls were selected
- which tests were carried out
- which outcome measures or scores were applied
- methods of statistical analysis
- patient/cohort demographics
- ethical approval

A simple explanation of the statistical methods should be given. (Note: 'p value' has statistical value while 'confidence interval' is of value clinically.) State who conducted the statistical analysis or which instruments were used. If, as a reviewer an adequate assessment of the statistical analysis cannot be made, a comment in this regard must be addressed to the Editor.

### Results

The 'Results' section must present the data measured or collected and must contain the statistical or other analyses. State the outcome of the study subjects included, the number studied to completion, the numbers lost to follow-up with a categorisation of each. Numbers must match those in the 'Materials and methods' section.

Record raw numbers with percentages added. Tables and graphics may assist in conveying the relevant results.

### Discussion

The 'Discussion' must focus on the specific question or hypothesis posed in the introduction. Aspects already stated in the introduction should not be re-iterated. The discussion should address this study's construction and design, its findings and outcomes and if the results support a conclusion. Do not draw conclusions not supported by the information and data obtained from the specific study presented.

The results should be contextualised in a clinical or scientific sense. Discuss this study's strengths and weaknesses. The paper should end with a summary statement which conveys the conclusions of the findings.

### References

'References' should be succinct, appropriate and up to date. Reviewers should scrutinise and check a number of references to ensure they have been appropriately listed.

### Review article

The main purpose of 'Review' articles is educational. The author must present a full and balanced overview of the subject.

All current views and expressed opinions, aetiological theories or concepts, diagnostic issues and management options should be presented.

In the discussion, an attempt should be made to present best current practice and the rationale for that choice. The presentation of personal experience or preference is not necessary unless this conveys a useful message.

### Statistical guidelines

#### Levels of evidence

It has become an essential prerequisite to view the outcomes and conclusions of all publications appropriately. This is best achieved by an understanding of the internationally accepted 'level of evidence' criteria introduced by Codman,<sup>1</sup> an orthopaedic surgeon, in 1912.

An article's suitability for publication becomes directly enhanced the greater the 'level of evidence'; hence all research projects under consideration or being designed should strive to maximise the credibility of the work by ensuring adequate 'level of evidence'.

It may be difficult or in fact impossible to achieve the theoretical best level of evidence (i.e. prospective randomised trial) for some research questions. An example would be to attempt to answer whether or not in the management of degenerate lower spinal disease total excision of the lumbar vertebrae would result in fewer failed back operations when compared to disc replacement. Studies with questionable viability or ethical standards are usually rejected by the ethics review committees, hence the importance of the ethical review process.

Personal opinions and case studies (uncontrolled retrospective) are clearly less useful than larger, well-controlled prospective studies. Mostly these, small or large, series of cases or personal opinions, through selective sampling, may lead to unsubstantiated conclusions and are thus misleading.

However, not all level IV and V studies should be disregarded. New ideas or concepts presented as pilot studies can be usefully published, provided the interpretation of these data is viewed in the appropriate light. By the nature of this animal, a 'statistical analysis' of the results is meaningless. The understanding of disease transmission like that of cholera (by observing trends in 1849), and HIV in 1981, was achieved by the publication of case series.

Thus, level IV and V studies do have value but care must be taken in the interpretation of the published data. Researchers should attempt to promote initial studies up the evidence ladder and substantiate or refute findings with higher powered studies.

### Statistical analysis

In the current climate where evidence-based medicine is paramount in the decision-making chain, it is essential that the message conveyed by research work reflects, as accurately as possible, the 'truth' as we know it today. Statistical methods may appear counterintuitive so obtaining expert advice is imperative.

The 'Method' section should contain a description of the statistical methods employed for every parameter assessed.

Prior to undertaking the study, ensure that the study design takes into account the sample size as determined by the diversity of the group and the parameters to be assessed, such that bias is eliminated. Matching the study cohort to matched 'controls' is preferable.

A 'power statement' should be added. Adequate response rate, or follow-up rate, and duration must be ensured as determined by the 'power of the study'. (A power statement is the chance of detecting as significant, a specified treatment effect, and 'adequate' is usually >80%).

'Blinding' is a valuable tool for eliminating bias.

Conclusions deemed 'significant' should be limited to those that are supported by the statistical analysis.

The assessment of outcome must be differentiated between statistical and clinical significance. Clearly a small difference in a functional scoring system may be proven to be unlikely due to chance (low p value) but have no clinical relevance. For example a difference of 12 points on the Oswestry disability Index is considered the minimum clinically detectable difference. Thus a 6-point change with a p value of 0.01 is meaningless.

Well-validated, appropriate outcome instruments should be chosen. In addition how they were completed should be explained to avoid bias.

### Tables, charts, figures and diagrams

- Do not include anything unless it adds information to the paper.
- All legends must fully describe the contents.
- Do not repeat text information conveyed in tables and charts.

*Where an author has used the work of others, all such instances should be appropriately referenced and where copyright issues arise, permission for reprinting should be obtained and forwarded to the Editor-in-Chief*

### Plagiarism

This is perhaps the most difficult aspect of the reviewer's task, namely judging whether or not the author has used the work or words of others, conveying the impression it is their own.

Where an author has used the work of others, all such instances should be appropriately referenced and where copyright issues arise, permission for reprinting should be obtained and forwarded to the Editor-in-Chief. Failure to conform should be reviewed in a serious light.

The Internet has a number of free plagiarism detectors that one can use. Try a Google or other search entering 'plagiarism detector' or 'plagiarism checker' for useful on-line tools.

### Statements

All papers must contain a statement declaring potential conflicts of interest or absence thereof. All studies involving biological material or tissues derived from humans or animals or studies involving animals or humans must have attained ethical approval from an approved Ethics Review Committee.

### Assistance to authors

As far as possible the reviewer, through constructive feedback, should attempt to assist the author in making the paper 'more publishable'. This should be viewed as part of the education process, which in the long term will elevate the quality of submissions and the status of the journal.

### References

1. Ballard DJ, Spreadbury B, Hopkins RS. Health care quality improvement across the Baylor Health Care System: the first century. *Proc (Bayl Univ Med Cent)*. 2004 July;17(3):277-88.