

Criteria for Assessment of an Article from a Journal

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INTRODUCTION

Review of recent articles is important to keep the surgeon informed as to the latest developments in the various fields of Orthopaedics. They are most productively done by organizing journal clubs whereby a trainee or registrar is assigned to present one or two articles selected by a consultant assigned to moderate the session. The consultant is assigned a particular topic. It is his responsibility to select the articles to be discussed. Selection of the best articles on the topic needs experience and is therefore best done by an experienced consultant. On the other hand a good critical analysis is an art which must be exercised and learnt by the trainee presenting it. This article describes the various factors that should be taken into consideration both in the selection of the article by the consultant and in the analysis of journal articles by the trainee making the presentation.

SELECTING ARTICLE FROM A JOURNAL

This itself requires considerable preparation by the consultant moderating the journal club session. The criteria includes:-

1. Current Article

The article must be recently published so that new ideas or technology is being discussed.

2. Article Must be of Good Quality

The consultant, in order to conduct the session well, must do a literature search and choose the best articles. Factors considered include:-

- Articles in good peer-reviewed journals (Tier I)
- Original / scientific article
- Current concept / update / instructional course lecture which are well-written
- Article written by authors who are authorities in the field of interest.
- Article from world renowned institutions
- Article with no vested interest
- Article from multi-centre study
- Article involving multi-disciplinary research all of which are described in detail below under the criteria for assessment which must be used by the trainee in assessing the article chosen.

CRITERIA FOR ASSESSMENT OF ARTICLE FROM JOURNAL

These include:-

General Criteria

1. Ranking of journal

2. Type of article
3. Reputation of author(s)
4. Reputation of institution(s)
5. Source of funding
6. Scope of research
7. Multi-disciplinary research

Scientific Criteria

1. Objective(s) of study
2. Materials used
3. Methodology employed
4. Results obtained
5. Discussion
6. Conclusions drawn
7. Clinical significance
8. Bibliography

GENERAL CRITERIA ASSESSED

1. Ranking of Journal

Journals are ranked according to its impact factor and citation index into Tier 1, 2, 3 or 4. The ranking is different by different Universities. Tier 1 is better than Tier 2. Articles from peer-reviewed tiered journals are better than articles from non peer-reviewed journals.

2. Type of Article

An original article or a scientific article which is the result of an original piece of research done by the authors is better than a review article which simply summarizes what has been done by others but contribute little or nothing to existing literature. In this regard, current concepts review / update or instructional course lecture on the topic which is well written by an authority on the subject is better than an ordinary review by someone little known as to his expertise in the field reviewed.

3. Reputation of Author(s) of Article

An original article by author(s) reputed by peers to be an expert authority on the subject is better than one produced by author(s) less reputed in the field of study. e.g. Frykberg for diabetic foot problems or pomposelli for vascular reconstruction for diabetic foot problems.

4. Reputation of Institution(s) of Author(s)

An original article which is a product of a respected institution is certainly more precious than one from an institution less famous. e.g. from Mayo Clinic or from Harvard Medical School

5. Source of Funding of Research Work

It is important to look at the source of funding for the

research work. An article which is the result of a commercial grant is less respected than one which is borne by the institution itself. The former is likely to have vested interest compared to the latter.

6. Scope of Research

A research which is the output of a multi-centre study is more valuable than one which is the output of a single centre study. In this regard, a multi-centre institutional study involving several countries is more highly regarded than one which is a multi-institutional national study in one country.

7. Multi-Disciplinary Research versus Single Disciplinary Research

Likewise, a multi-disciplinary research study is held in higher regard than a single disciplinary research study e.g. one involving orthopaedic surgeons in combination with bioengineers, pathologists, biochemists etc versus one involving orthopaedic surgeons alone.

SCIENTIFIC CRITERIA ASSESSED

1. Objective(s) of Study

The reader should assess whether:-

- The objectives are clearly defined or not
- They are good/adequate/inadequate

2. Materials Used

One should also assess whether:-

- The study population is of good sample size for statistical analysis to be performed?
- The number of specimens used in the animal experimentation study or cadaveric study is large enough to be statistically significant?

3. Methodology Employed

It is important to assess the following:-

- Is the clinical study prospective or retrospective? Prospective is more valuable than retrospective.
- Is the correct methodology employed? Or is it inappropriate or unsuitable methodology that is used to produce significant results?
- Are there proper controls designed in the study? Or is there lack of proper controls that will take away much of the merit of the work?

4. Results Obtained

Likewise, it is important to evaluate the following points:-

- Are the results presented in a clear fashion?
- Are the tables well designed?
- Are the figures well designed?
- Is there a table missing which could throw more light on the article?
- Has statistical analysis been performed? Results with statistical significance is more important than one with no significance.

5. Discussion

In the discussion, one needs to critically analyze the following:-

- What is the quality of discussion?

Inadequate / adequate / good / excellent

- Does it highlight important differences to the author's findings?
- Does it highlight important similarities to the results of other research workers?
- Does it highlight new findings (if any) which will make a significant contribution to existing literature?

6. Conclusions Drawn

In the section, one must critically look at the following questions:-

- Has the author drawn relevant / appropriate / sound conclusions based on the data obtained from the results presented?
- Are his hypotheses unwarranted?
- Has he extrapolated his conclusions from the results obtained? e.g. extrapolated results based on animal studies and recommended clinical applications without doing clinical trials first.

7. Clinical Significance

On this aspect, one must honestly ask:-

- Is the work of any clinical significance at all? A work that has clinical significance is certainly far more valuable than one with no significance at all.

8. Bibliography

Questions that should be asked for this section include:-

- Has the author used the critical number of references required to show that a good, review of literature for the topic has been done?
- What is the quality of the references the author has quoted?
- Are the references retrievable? The author notes that very often little attention is paid to references. Actually, a lot can be gained by critically looking at the references the author has appended.

CONCLUSION

A good article is one that is retrieved after much reading and careful selection. The author has listed the criteria that could be applied before the article is chosen.

After choosing a good article, a good assessment of the article can only be done after the presenter (trainee, registrar) reads the article painstakingly and critically and meticulously assess both general criteria and scientific criteria.

It is only when the moderator (consultant) has chosen the article well based on the criteria listed and the presenter has meticulously assessed the article based on all criteria described (general and scientific) that a good journal club can be performed which will benefit not only the presenter and the moderator but also all doctors attending the journal club.

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