

**أساليب البحث
دورة تدريبية
Research Methodology
Training Course**



**شئون البحث العلمي و الدراسات العليا
Research and postgraduate Affairs**

**نقد دراسة علمية
How to critique a research article**

Prof. Dr. Abdelraouf A. Elmanama

Training Course content

Title	Duration	Speaker	Date & Place
Opening ceremony			
Elements of a successful Research Proposal & research ethics – عناصر المقترح البحثي الجيد – اخلاقيات البحث العلمي	2 hours	Prof. Abdelraouf A. Elmanama	Saturday 7-11-2015
Basic concepts in research & Research Designs – مفاهيم أساسية في البحث العلمي – تصميمات البحوث	2 hours	Dr. Khamis Elessi	Monday 9-11-2015
Citation & referencing in research – الاستدلال والتوثيق في البحث العلمي	2 hours	Prof. Adnan Al-Hindi	Sunday 15-11-2015
Evidence Based research - basic concepts – مفاهيم أساسية	2 hours	Dr. Khamis Elessi	Tuesday 17-11-2015
How to enter, clean and analyses research Data – ادخال البيانات وتجهيزها وتحليلها	2 hours	Prof. Adnan Al-Hindi	Saturday 21-11-2015
How to critique a research article – نقد دراسة علمية	2 hours	Prof. Abdelraouf A. Elmanama	Monday 23-11-2015
Certificates ceremony توزيع الشهادات			

Sections in a Scientific Paper

- **Journal Name, Volume and Issue number (research pages)**
- **Title**
- **Authors/home site**
- **Abstract + key words**
- **Correspondences**
- **Introduction**
- **Material & Methods**
- **Results**
- **Discussion**
- **Acknowledgements**
- **References**
- **Citing reference and acceptance date**

Journal

NAME OF JOURNAL (complete title so you can cite it or inform colleagues where to look).

- What is impact factor
- The **impact factor**, often abbreviated **IF**, is a measure reflecting the average number of citations to articles published in science and social science journals. It is frequently used as a proxy for the relative importance of a journal within its field, with journals with higher impact factors deemed to be more important than those with lower ones.

https://doc-05-bc-docsviewer... Research Techniques for Med... Virology Journal | Full text | Pr... وكالة معاً الاخبارية

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Journal Name

Impact factor

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Research

Prevalence and risk factors of hepatitis B and C viruses among haemodialysis patients in Gaza strip, Palestine

Abed El-kader Y El-Ottol^{1*}, Abdelraouf A Elmanama² and Basim M Ayesh²

* Corresponding author: Abed El-kader Y El-Ottol elottol@yahoo.com

Author Affiliation

1 Microbiology Department, Central Laboratory, Al-Shifa Hospital, Gaza, Palestine
2 Medical Technology Department, Islamic University, Gaza, Palestine
3 Biology Department, Al-Aqsa University, Gaza, Palestine
For all author emails, please [log on](#).

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Authors affiliation

Acceptance history

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Title

- Tells what the research is about
- Concise (i.e. not wordy)
- Attention getting (so you are interested to read more)

“Swiss Made Medical Instruments Are Better Than Those Made in America”

- **Is this a good or a bad title? To me it is bad because it:**
 - **does not tell what the research is about, instead it tells the results of the research.**
 - **“medical instruments” is too vague**
 - **the word “America” is too vague**
 - **what is meant by “better”, e.g., cheaper, stronger, lighter, more efficient surgically, etc.,?**

"A Comparison Between Swiss and Canadian Made Forceps"

- Now, to me this is a superior title. It is more exacting, tells what the research is about, is more precise about the location of the work (Switzerland vs. Canada) and specifies the medical instrument that is being investigated (ie., forceps).

Authors and their home site

- Names of all authors.
- Do you recognize any of them as authorities in the field?
- What institution(s) are they from? Is it academic or commercial? Is the institution a leader in this field?

Abstract and Key Words

An Abstract is a concise summary of what the research is about, the findings and implications.

Many readers will see nothing else (ie., not be able to obtain and read the entire paper) so it must be complete and stand alone.

The length is limited by the journal and is usually less than 400 words.

Key Words come after the Abstract. These are a few words (less than 10) that are used in computer searches. They must be words that will direct the searcher to your paper).

Correspondences

All readers have a right to get in touch with the authors.

This section contains the names of the authors, precise mailing address, email, telephone and fax numbers.

These must be clearly stated so interested parties may get in contact with you about the paper.

Introduction

In some journals this section is called the Literature Review.

At this time, the authors attempt to acquaint the reader with the current status of this field of research. It is a very brief historical review of what is the current status of this field up to this point in time.

The introduction usually starts with more general thoughts, ideas, facts and then goes to a more specific issues that will support the purpose of his work.

At the end of this section the author usually states the aim of the research to be presented in this paper.

Materials & Methods (or "Methods")

Now the author tells how the research was done and what materials, supplies, equipment, animals, chemicals, etc., were needed to accomplish it.

This must be written in a most precise manner. Everything must be explained so clearly that the reader could go to his lab and repeat the experiments exactly (considering he had the same Materials available).

This is a difficult section to write because it must be so precise and detailed.

A reader must critically analyze this section to know how the research was done.

Nothing can be hidden from the reader.

Materials & Methods (continued)

This is the section that must be read most thoroughly.

Some authors forget (or omit) critical procedures here (so others cannot duplicate their work---this gives the authors more time to continue the research with no competition).

Sometimes this is done to slant the findings towards a certain point of view.

Here are some sample questions to ask when reading Methods:

Materials & Methods (continued)

what % of a metal or chemical was used?

how many times were the tests repeated?

how big was the test population?

what method was used for statistical analysis?

what temperature was used in an experiment?

is this a human or an animal experiment?

how many years after the experiments were the subjects reevaluated?

Results

- Now the author shows the results of his research.
- This may be done by presenting data in tables, charts, etc.
- The data must be concise and clear.
- It cannot be contaminated with any discussion:
- The data are not to be explained at this time.
- Statistical analyses are presented now and

Discussion

- Now the author has the opportunity to discuss his data.
- He can compare it to previous reports (usually cited in the Introduction) and tell why his findings add to our knowledge of this subject.
- He can even criticize reports of others, being careful to tell why his data are superior.
- He can now stress the strong points of the data he showed in Results and even point out the weaknesses of previous reports.

Discussion

- Also in the Discussion the author may wish to speculate about the future using the data he presents.
- However, be careful, don't speculate too much unless you have the data to back it up (ie., prove it).
- A Discussion is like talking to a colleague who has asked you, "What is important about the research findings that you are presenting here?"

Acknowledgments

In this section the author gives thanks to the various people who helped him with the research.

This may include technicians, secretaries, translators, etc.

For the reader it is most important to see if the author gives thanks to any commercial companies who have supported this research.

This will give you an idea if the work may be slanted or bias towards an agency that supported the work.

Most critical readers of science papers are more critical of research that was paid for by commercial companies.

References

For the reader the references are very important because this is where you can look up previous reports on this subject.

That means that it is critically important that the references are cited 100% accurately.

Also, by looking over the references a knowledgeable reader can tell if the author has cited the leaders in this field.

He can also tell if the author's literature review was complete and thorough or even biased.

the study; supervision on the theoretical and practical work. BMA participated in the design of the study; and supervised on the molecular genetic studies and the statistical analysis. All authors have read and approved the final manuscript.

Acknowledgements

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- Top
- Abstract
- Introduction
- Materials and methods
- Results
- Discussion
- Conclusion
- Competing interests
- Authors' contributions
- Acknowledgements
- References

Citing reference and acceptance date

- Someplace in the publication (often at the top, left of the title page) the editor of the journal will show how this paper is cited (e.g., journal name, year, volume # and pages). This shows you how to cite this paper to colleagues
- The acceptance date shows when the journal actually accepted the paper for publication. Sometimes this is very different from the actual publication date. It also tells the reader when the research was completed, ie., nothing more was done after that date.

End of Lecture

Thank you

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