Tipos de artigos científicos e a sua estrutura

Jornadas do Centro de Neurociências Publicação Científica: Motivação e Formação
9 de abril de 2016

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Moderador: Professor Doutor Altamiro Pereira

-CINTESIS – In4Health
-CIDES – Faculdade de Medicina da Universidade do Porto
-Porto Biomedical Journal - PBJ
Article types classification

- Original article
- Case report
- Review
- Editorial
- Letter to the editor
- Commentary

Peh WC, Ng KH. Basic structure and types of scientific papers. Singapore medical journal. 2008;49(7):522-5.
Case Report

Description of a single case with unique features. These unique features may consist of:

- previously unreported observations of a recognized disease
- the unique use of imaging or diagnostic test to reveal a disease
- previously-unreported clinical condition
- previously-unreported treatment in a recognized disease
- previously-unreported complication of a procedure

Importance?

1981 - AIDS

1. Introduction
2. Description of the case
3. Discussion
4. Literature review
5. Summary/conclusions

Systematic REVIEW

- application of scientific strategies that limit bias by the systematic assembly, critical appraisal and synthesis of all relevant studies on a specific topic

Peh WC, Ng KH. Basic structure and types of scientific papers. Singapore medical journal. 2008;49(7):522-5.
Review

Meta-analysis

- Statistical pooling of data from individual studies.

Peh WC, Ng KH. Basic structure and types of scientific papers. Singapore medical journal. 2008;49(7):522-5.
Review

REVIEW - This is a detailed analysis of recent developments on a specific topic. It serves to highlight important points that have been previously reported in the literature. This type of paper does not introduce new information and does not include the author’s opinion or personal experience. A large number of relevant references are expected.

1. Research Question
2. Research Protocol
3. Literature Search
4. Data Extraction
5. Quality Appraisal
6. Data Analysis and Results
7. Interpretation of Results

PICO- Population/Intervention/Comparison/Outcome
Query
Pubmed/EMBASE
Publication bias (results/language)
PRISMA

Commentary

Short article that describes an author’s personal experience of a specific topic

- the subject may be controversial and the author’s perspective is provided
- outline the various viewpoints that exist
- it may be based on a current hot topic

"I don't believe I've ever seen a scientific paper defended quite as vigorously as this one!"
Editorial

• short review or critique of original articles accepted for publication in the same issue of the journal

• a brief description of a subject that does not warrant a full review

• draw attention to very recent innovations or subjects of general interest to readers

• Editorials are invited by the editor or written by the editor

Letter to the Editor

- Short and written on any subject of interest to the journal reader
- Comments on previously-published articles (objective and constructive)
- Written response (Author’s Reply to Letter)
- This section may sometimes also be used for displaying new hypotheses.
What is the aim of the study?

1- To describe a population (PO questions)
2- To quantify the relationship between factors (PICO questions)
Researcher intercedes as part of the study design?

3-Yes - Experimental
4-No - Observational
Randomized Clinical Trials

First documented RCT performed in 1747 by James Lind

- Introduce a treatment/exposure to study its effect on real patients
- Participants are randomly assigned into the control group or the investigational group
- Control group receives the typically used or approved treatment
- The investigational group receives the treatment or intervention being studied.

Randomized Clinical Trials

Randomized Clinical Trials

Watching Your Step – The Different Stages of Clinical Development and What They Examine

**Phase I**
- Checking for safety
- Sample: 10-20 healthy volunteers
- Unexpected side effects may occur

**Phase II**
- Checking for efficacy
- Sample: about 200 patients
- Most research projects fail in Phase II due to product not being as effective as anticipated

**Phase III**
- Confirm findings in large patient population
- Sample: more than 1,000 people
- Likelihood to detect rare side effects increases with number of people involved

**Phase IV**
- Testing long-term safety in diverse patient population
- Sample: "real life patients" – testing being carried out outside of clinical environment (post-marketing studies)
- Previously untested groups may show adverse reactions

Source: AGCS

# Standards of Publication

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Basic Structure of a Scientific Article

Title

Projected life expectancy of people with HIV according to timing of diagnosis

Authorship

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Affiliations

Abstract

Background: Effective antiretroviral therapy (ART) has contributed greatly towards survival for people with HIV, yet many remain undiagnosed until very late. Our aims were to estimate the life expectancy of an HIV-infected MSM (men-who-have-sex-with-men) living in a developed country with extensive access to ART and healthcare, and to assess the effect of late diagnosis on life expectancy.

Methods: A stochastic computer simulation model of HIV infection and the effect of ART was used to estimate life expectancy and determine the distribution of potential lifetime outcomes of an MSM who becomes HIV positive in 2010 aged 30 years. The effect of altering the diagnosis rate was investigated.

Results: Assuming a high rate of HIV diagnosis (median CD4 count at diagnosis: 432 cells/mm\textsuperscript{3}, projected median age at death (life expectancy) was 75.0 years. Therefore, 7.0 years of life were lost on average due to HIV; comparable to the effect of cigarette smoking. Cumulative risks of death by five and ten years after infection were 2.3\% and 5.2\%. The 95\% uncertainty bound for life expectancy was (68.0, 77.3) years. When a low diagnosis rate was assumed (diagnosis only when symptomatic; median CD4 count 140 cells/mm\textsuperscript{3}), life expectancy was 71.5 years, implying an average 10.5 years of life lost due to HIV.

Conclusions: If low rates of virologic failure observed in treated patients continue, predicted life expectancy is relatively high in people with HIV who can access a wide range of antiretrovirals. The greatest risk of excess mortality is due to delays in HIV diagnosis.

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AIDS 2011, 25:000--000

Keywords: antiretroviral therapy, diagnosis, life expectancy, model

Keywords
Basic Structure of a Scientific Article

IMRAD structure started to be used in the 50’s, mainly in physics field

IMRAD stands for:

- **Introduction** (What question was asked?)
- **Methods** (How was it studied?)
- **Results** (What was found?)
- And
  - **Discussion** (What do the findings mean?)

“The reader needs to see a building, not a pile of bricks!”
Basic Structure of a Scientific Article

- Title
- Abstract
- Introduction
  - Study Site
  - Methods
  - Results
- Discussion
  - Conclusions
  - Acknowledgments
- References

What's it about? (Brief, informative, and readily searchable by a person or a machine!)

What is it in a nutshell? (Follow the IMRAD logic and highlight major findings.)

Why did you do it? (The problem, importance, known, unknown, and your research questions/hypotheses/objectives.)

Where did you do it? (Why here? Relevance to your study? This may be part of Methods.)

How did you do it? (Not only methods used, but also justifications for using them.)

What did you find? (Summarize findings with headings and informative figures; don’t discuss!)

What does it mean, and so what? (Results explained? Objectives achieved? Limitations? Implications for future research and application?)

What are your major findings and their significance? (Don’t simply repeat what has been said in Discussion. This may be part of Discussion.)
Basic Structure of a Scientific Article

Acknowledgements

The authors acknowledge the use of the UCL Legion High Performance Computing facility, and associated services, in the completion of this work.

FN and ANP were involved in model programming. ANP and JDL helped develop the original model. FN drafted the manuscript. All authors were involved in the conception of the paper, interpretation of results, critical revisions of the paper and approved the final version.

Conflicts of interest

None declared.

References


“The best papers combine the science ... with the art of writing”
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