

5/27/2020

# SCIENTIFIC WRITING

## PART-1

Ghaffarifar S, M.D, M.M.Ed, D.H.E.P



Ghaffarifar S, M.D, M.M.Ed, D.H.E.P

# Objectives

- After this short presentation, you will be able to:
  - 1) list different types of research output
  - 2) explain about important considerations before sharing the research report
  - 3) outline the criteria to find a proper journal

Ghaffarifar S, M.D, M.M.Ed, D.H.E.P



# Different types of research output

- 1) **Paper**
- 2) Thesis
- 3) Dissertation
- 4) Patent
- 5) Simple report!
- 6) Change

Ghaffarifar S, M.D, M.M.Ed, D.H.E.P



# Important considerations before sharing the research report

- ❑ Journal selection before writing
- ❑ Complete, concise & clear writing
- ❑ Some useful questions:
  - 1) “do I have a story to say?”
  - 2) have I conducted “an original and innovative” research?”
  - 3) do my findings have an immediate impact on patients?
  - 4) are my audience “local, regional or international”?



# Criteria to find a proper journal

- ❖ The type of our article
- ❖ Aims and scope of the journals
- ❖ Relevance of the findings to the journal's readership
- ❖ References in our article

Ghaffarifar S, M.D, M.M.Ed, D.H.E.P



# Criteria to find a proper journal

- ❖ Journal's guide for the authors, word limit & ..., invitation-only journals
- ❖ Journals' review and publication timelines
- ❖ Advices from the editorial team by calling or e-mailing them
- ❖ The prestige of the journal
- ❖ Journal metrics

Ghaffarifar S, M.D, M.M.Ed, D.H.E.P



# Journal metrics

## Speed

- ✓ Review and online publication

## Reach

- ✓ Address for corresponding authors

- ✓ Location of journal usage

- ✓ Open access policies

## Impact metrics

- ✓ Impact Factor, SJR, ...





# Open access options

- 1) Gold open access
- 2) Green open access



# Types of Medical articles

✿ **Original article**

✿ Review article

✿ Case reports

✿ Editorial

✿ Letter to editor

✿ Personal views



# Types of research articles (to be continued...)

- ✿ Brief reports, rapid or short communications
- Early communication, not too much data
- ✿ Review papers



# Types of research articles

...

- ❑ Full articles
- ❑ Micro-articles
- Publishing data, software, methods, videos & ...



# Steps in scientific writing

- ▶ Design well your research
- ▶ Decide politics
- ▶ Choose journal
- ▶ Read instructions to authors/papers
- ▶ Set framework



# Steps in scientific writing

- ▶ Prepare drafts
- ▶ Distribute
- ▶ Polish
- ▶ Wait
- ▶ Submit



# The basic structure of an article (IMRaD)

- ❑ Introduction : Why did you start
- ❑ Methods : What did you do
- ❑ Results : What did you find
- ❑ Discussion : What does it all mean



# The basic structure of an article (SIMRAD)

## **TITLE**

**S: Summary** (structured abstract)

**I: Introduction** (what question was asked)

**M: Methods** (how it was studied)

**R: Results** (what was found)

**A: Analysis** (how data was analyzed)

**D: Discussion** (what the findings mean)

**Acknowledgements**

**References**





# Preferred order of writing

- 1) Methods
  - 2) Results
  - 3) Introduction
  - 4) Discussion
  - 5) Abstract
- References?



Appreciate your attention  
Any questions?



# Some characteristics of a paper title

- Specific, accurate, concise, informative and short
- Enticing and interesting
- With readily identifiable keywords
- More flexible than the title of the proposals



# Some characteristics of a paper title

- About 10-15 words, 2 printed lines
- A specified number of characters, including white spaces
- Not implicit words in some journals' title
- Beginning words of “on” and “toward”
- ✓ “On the origin of the species” or “Toward the origin of asthma ...”



# Examples

➤ The effect of parental smoking on the **development** of asthma and other atopic disease in children: evidence from a birth **cohort study** in NSW, Australia

1. Parental smoking and the development of childhood asthma

➤ Respiratory health of Australians

2. Asthma and *atopy in Australian children*



# Some do's & don'ts to write a paper title

- As short as possible
- If relevant, study period and location
- Not jargon
- Not abbreviations
- Not phrases such as “ a study of”, “ investigation into”, “ observations on”



# Some important considerations to write a paper title

- Minimal punctuation
- Different ways of writing titles
  1. Effect of asthma on linear growth in children
  2. Does asthma reduce linear growth?
  3. Linear growth deficit in asthmatic children
- “Not to be disappointed if your paper accepted for publication and the title is ultimately rewritten by the journal editors!”



# Some important considerations to write the introduction section

- One of the hardest parts of a paper to write
- Short, arresting
- Funnel down structure
- Including “ what we know” , “ What we don not know” and “ why we did this study”





# Some important considerations to write the introduction section

- In about one page
- At least 3 paragraphs
- 1) The first paragraph:
  - ✓ Importance
  - ✓ current knowledge



# Some important considerations to write the introduction section

2)The second paragraph:

- ✓ Necessity
- ✓ Existing limitations
- ✓ Gap
- ✓ The research question
- ✓ The reason for conducting the current research



# Some important considerations to write the introduction section

3) The last paragraph:

- ✓ Aim or hypothesis
- ✓ Study design and ...
- ✓ Implication

4) Theoretical or conceptual framework

- ✓ in introduction or discussion



# Some important considerations to write the introduction section

- As short as possible
- From general issues to research question
- Topic sentences(preferably in the first line)
- Evidence only from the most relevant and valid studies
- No support by” text book knowledge”



# Some important considerations in writing the introduction section

- Not definitions and basic information
- Not extra padding
- Cover the text rule
- Some information in discussion
- Say what was found, not who found and how
- Consistency in writing and linking words and phrases
- Not about the key results of the current study
- Summary stops in only basic science



# Some characteristics and components of the methods section

- The most important section
- Details of study design(RCT, Cohort, systematic review, ...)
- Methods( intervention, observation, literature review, ...)
- Methods(Prospective, retrospective, ...)
- The sequence of procedures



# Some characteristics and components of the methods section

- Participants: sampling frame, inclusion and exclusion criteria
- Participants' privacy, not any identifying information, their informed consent
- The logic behind any groupings( race , ethnicity, ...)
- Self-assigned or observer assigned ethnicity
- Location, sometimes with more details
- Possible contextual effects on the procedures, confounding variables



# Some characteristics and components of the methods section

- Sample size & sample characteristics\*
- Details of sample size calculation
- Methods of randomization, allocation, concealment and blinding
- Fewer than 30 participants in each group!
- Group differences at baseline

5/27/2020 The CONSORT statement Chaffarifar S, M.D, M.M.Ed, D.H.E.P





# Some characteristics and components of the methods section

- Research tool, psychometric properties of questionnaires, ...
- The way to standardize the research tool
- Reference to the standardized methods& tools, if...
- More details about none-English , inaccessible ones



# Some important considerations in writing methods

- Generic name, manufacturer name and doses of a drug
- Brand name and supplier of an equipment
- Adequacy of follow-up
- The specific outcome measure and its validity and reliability



# Some important considerations in writing methods

- More details about rare or newly devised equipment
- The way to calibrate and standardize an equipment
- The way to reduce bias
- Comparability between equipment, observers and within participants



# Some important considerations in writing methods

- The procedure to analyze data
- Specific details of statistical tests
- Serious bias with incorrect statistical test
- Reference to not simple or well known tests
- Computer packages



# Some important considerations in writing methods

- Ethical approval
- Approval from the ethics committee
- Ethical considerations in choosing research design
- Patients, animals, stem cells, environment
- Details of institutional review board(IRB) approval
- Informed consent from each participant





Appreciate your attention