Principles of how to write a scientific paper and how to Select a Journal

Professor Janaka de Silva

Writing research papers for journals


Cinderella
Disney

Organising the content

Beginning:	*Why did you start?* *INTRODUCTION (Background)*	
Middle:	*What did you do?*	*METHODS*
	What did you find?	*RESULTS*
End:	*What does it mean?* *DISCUSSION (Interpretation)*	

Organising the content

INTRODUCTION (Background)

METHODS

RESULTS

and

DISCUSSION (Interpretation)

ABSTRACT

IMRADA structure

Introduction

- *Could be brief; not a historical review*
- *Explanation as to why you started or hypothesis*
- *At the end state clearly the question you have set out to answer with your study: objective*
- *To lead reader to this point a brief review of the relevant literature is necessary*

Introduction

- *At the end of a good introduction the reader should be*
  - *Clear regarding the question you have set out to answer*
  - *Convinced that the question is important*

Methods - What did you do?

- *Explanation of exactly what you did, in detail, eg:*
  - *Definitions*
  - *Subjects, calculating sample size*
  - *Design and setting*
  - *Methods of randomization*
  - *Details of lab methods and apparatus used*
  - *Doses of drugs*
  - *Statistics*

Methods

- *Give enough detail to enable others to attempt to reproduce the work using the same methods you have used, if they so wish to*

Results - What did you find?

- *Include only what you found that is relevant to the question you set out to answer (objectives)*
- *Decide the best (most reader friendly) way to present data*

Results

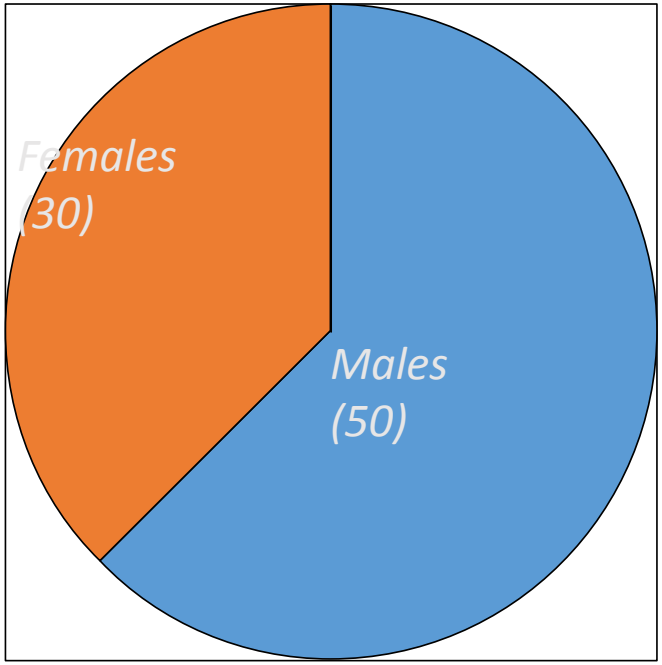
- *Descriptive data or brief numerical results – TEXT*

Results

There were 80 patients. Their sex distribution is shown in Figure 1

Results

Figure 1. Sex distribution of the 80 patients



Results

There were 80 patients, 50 were males

Results

- *Large amount of numerical data – TABLES*

Results

There were 80 patients, 50 males and 30 females. Of the males, 10 smoked more than 40 cigarettes a day, 30 smoked 20-40 a day, 20 smoked 10-20 a day, 15 smoked 1-10 a day, and 5 did not smoke. Of the females, 5 smoked more than 40 cigarettes a day, 10 smoked 20-40 a day, 5 smoked 10-20 a day, 5 smoked 1-10 a day, and 5 did not smoke

Smoking among males and females

No. of cigarettes smoked per day	*Males (n=50)*	*Females (n=30)*
>40	10	5
20-40	30	10
10-20	20	5
1-10	15	5
0	5	5

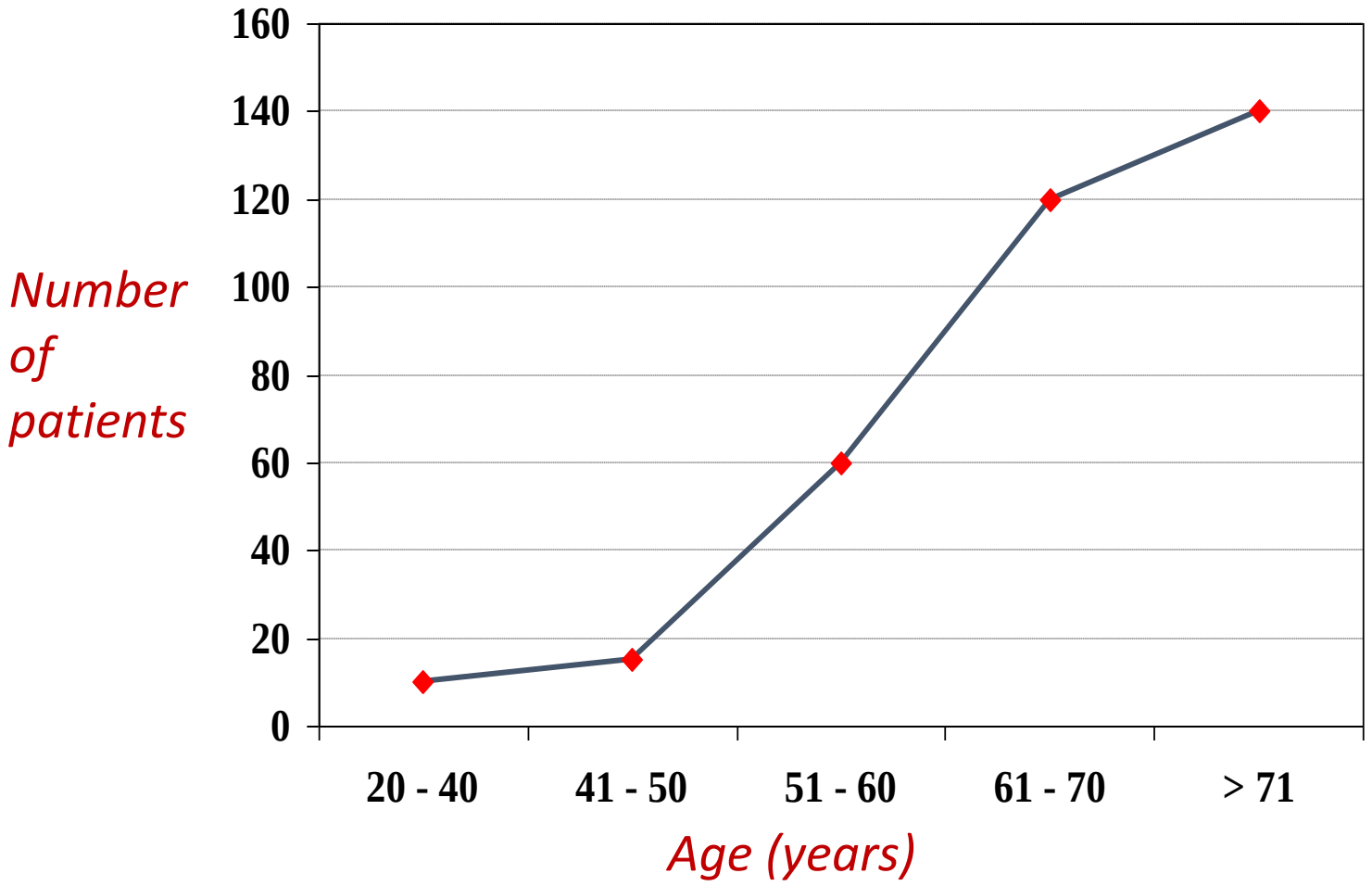
Results

- *Comparisons and relationships between sets of data – GRAPHS or SCATTER PLOTS*

Results

There were 345 patients with prostate cancer. Ten of them were 20 to 40 years old, 15 were 41 to 50 years, 60 were 51 to 60 years, 120 were 61 to 70 years, and 140 were over 71 years old

Relationship between prostate cancer & age



Discussion

- *Not an exhaustive review*
- *Recapitulate the main findings*
- *Discuss methods used if interesting or unusual, and any shortcomings*

Discussion

- *Compare results with those of other workers in the field*
  - *Confirm*
  - *Conflict: explain differences*
- *Conclude with the implications of findings and recommendations*

Abstract

- *Brief account (summary) of the chief points in a larger work*
- *Length variable: usually 150 to 250 word limit*
- *Referees and editors may decide acceptance or rejection of research based on the abstract*

Abstract

- *Should contain all the essential information but only the essential information on*
  - *Why it was done*
  - *What was done*
  - *What was found*
  - *What is concluded*

  in a few sentences each

Writing style

- *Use simple language*
- *Be as brief as possible*

Avoid padding

- *A considerable proportion of patients developed haematuria*

  Many patients developed haematuria

- *It is plainly demonstrable from the data presented in Table 2 ….*

  Table 2 shows ….

Choosing a journal to publish

Types of "publications"

- *"In my experience" – not a publication*
- *Presentation, abstract not published*
- *Presentation, abstract published* 
- *Journal publication as original article* 

Types of Journals

- *Journals that have no peer review*
- *Peer reviewed journals*
- *Peer reviewed journals published quarterly or more frequently* 
- *Indexed journals – included in international scientific databases* 

Open Access Journals

- *Science publication is an industry; SCI & Scopus private companies, charge for access to journals*
- *Growing support for open access publication; free to users - anyone with internet can access full text*
- *Some highly reputable and have high impact:*
  - *USA: Public Library of Science (PLoS)*
  - *Britain: BioMed Central (BMC)*
- *Many low quality open access journals: predatory, not indexed*

Widely recognized medical databases

- ***Expanded Science Citation Index*** *includes science and technical journals*
- ***Scopus*** *science, technical, social science and humanities journals*
- ***Index Medicus (Medline)*** *includes medical journals*

Measuring "quality" of research

- *"Quality" of a journal – no ideal method; based on measure of citations*
  - *Impact factor*
  - *SJR*
  - *Cite score*

- *"Quality" of a scientist's research*
  - *h-index: attempts to measure productivity and impact*
  - *i-10 index: number of publications with ≥10 citations*

Summary

- *Writing a research paper should be like writing a good story*
- *Beginning, middle, and end (the take-home message*
- *Brief as possible (people don't read long articles), in simple language*
- *Choose an indexed journal to publish the paper*