

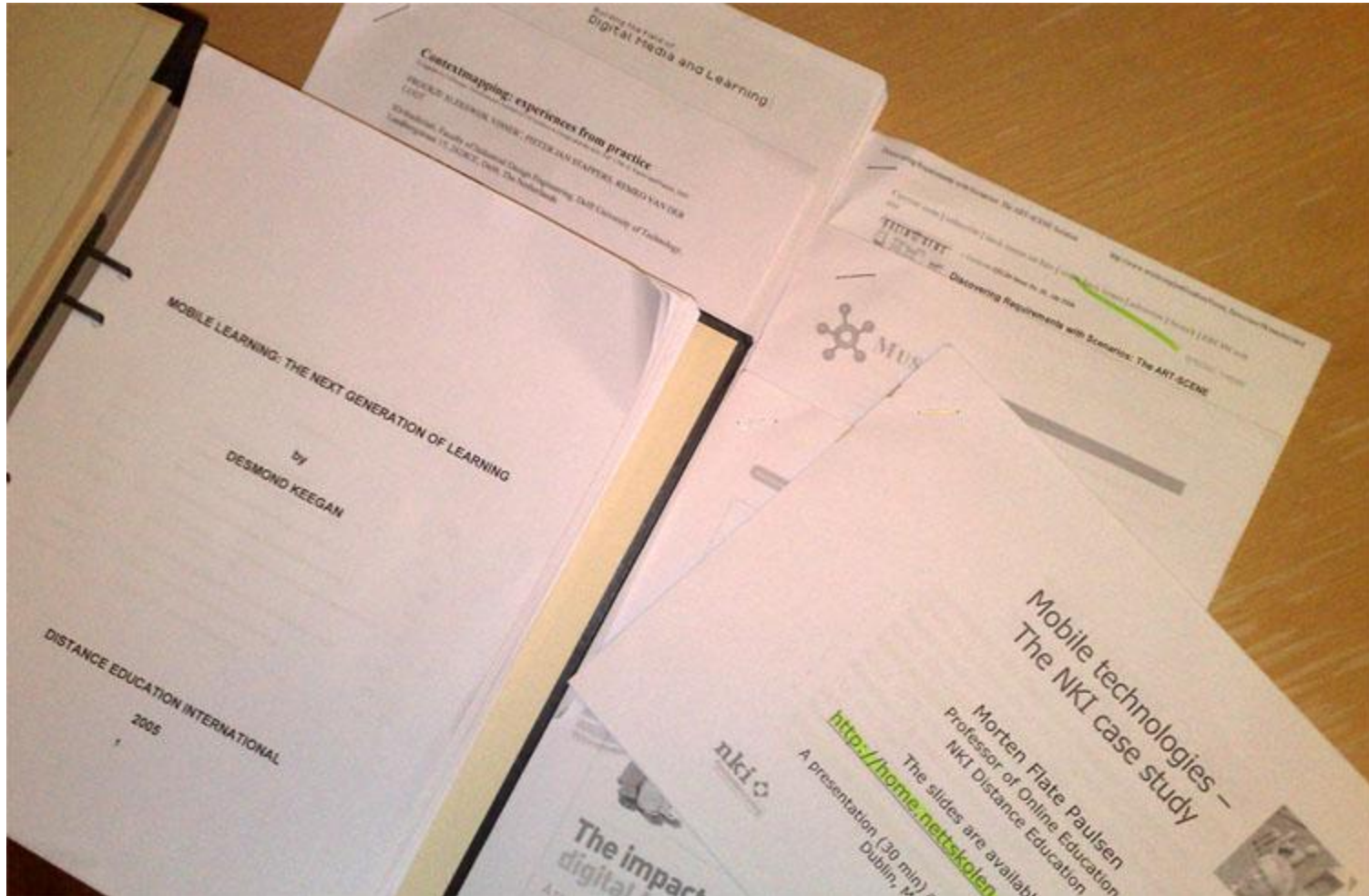
SCIENTIFIC WRITING

Randa M. Youssef

- Identify the aspects of writing
- Describe the structure of a scientific paper and reports
- Explain the process of writing
- State the value of developing an outline
- State the elements that should be present in the title
- State the components of the abstract
- State the questions that should be answered by the introduction
- State the components of the methods section
- Describe the results section
- State the link between the discussion and results
- Identify persons that should be acknowledged
- Know the style of writing the list of reference
- Recognize the style of a scientific writing

Writing scientific papers and reports

PERFORMANCE OBJECTIVE



- Content
- Organization
- Presentation of tables and figures
- Language and grammar
- Writing style

- Title
- Authors name and affiliation

- Abstract
- Introduction/Background
- Methods
- Results
- Discussion
- Acknowledgment
- References (Bibliography)

- **Prewriting:**
Taking notes, put ideas on paper, generate sentences and paragraphs while keeping the type of reader in mind
- **Writing:**
Start at any point you feel it is easier to start with. No need to complete the whole section before moving to another one but you may move between sections

- **Revision:**
Going back again and again to refine the writing by working on the content then the structure of sentences, then style.
- **Editing:**
Review for grammatical errors and usage errors.
- **Proofread:**
Print and read your report again.

Value of the Outline

- Facilitate writing
- Organize ideas
- Ensure logic sequence of ideas and arguments
- Show the relation between ideas
- Eliminate overlap between sections
- Reflect the flow of each section

Title

- Written the last though it appears the first
- Reflects the content of the paper
- Used for indexing and retrieving of the article

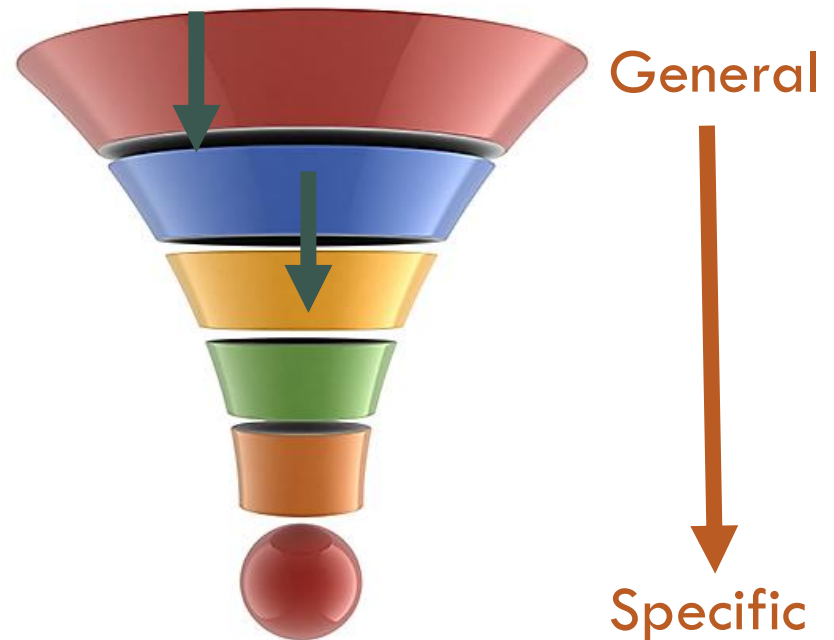
Title should be

- Short
- Include key words

- Selective summary of the article
- Structured abstract is the norm
- Abstract include
 - Background, rationale and aim
 - Methods
 - Main findings
 - Conclusion

- Purpose for the study
- Approach taken to realize the purpose
- Major findings of the study
- Relationship between these findings and the field
- Why you did it?
- How you did it?
- What you found?
- What does it mean?

- Two or more paragraphs
- Starts with general then to more specific
- Several ideas are presented and linked
- The ideas presented lead to purpose of the study



These are the questions for which you should provide an answer



- Background
- Gaps in literature
- The research question
- Relevance to field

What is known?

What is not known?

What will be answered?

How it may be useful?

It tells what has been done to answer the research question

- What type of research design has been adopted?
- Where and when the study has been conducted?
- Who have been studied?
- How many have been studied? And why?
- How those studied were identified and recruited?
- What was the intervention (if any; with reference to a protocol)?
- How data were collected?
- How data were analyzed?

- A [type of study] was conducted
- In [place] between [time]
- Targeting [target population]
- The estimated sample size was [number] considering the following assumption [.....]
- The [type of sampling] was used to select participants
- The intervention consisted of [describe] following the procedure describe by [make reference to the source]
- Data were collected using a questionnaire [describe] and medical examination including [describe]. Blood samples were collected [describe] and analyzed [for]
- Data were analyzed using [program]. The [types] tests were applied. Significance was judged at [%] level.

Narrative style is not accepted

Participants were directed to the interview room. There the nurse read to them the informed consent and asked them to sign it. After that participants were interviewed by the nurse which took 15 minutes. At the end of the interview the nurse asked them to wait for the physician for medical examination. After examination, participants went to lab to give 5 ml of blood.

- It is the answer to the research question
- Provide the new information that will fill the gap of knowledge
- Presented results are those pertinent to the research question and the hypothesis under study

- Report of the findings
- Tables and graphs
- Statistical results
- No interpretation (only facts)



Complement
each other

- The text is a summary of the results (presented in tables and figures or not)
- The text is written while having the discussion in mind
- The text should be concise to summarize the findings but informative
- Each paragraph should include a “theme” and the opening sentence refers to this theme
- Focus on results that will be addressed in the discussion (even if not significant statistically)
- Make reference to the tables and graphs (table 1 and figure 1)

Multinomial logistic regressions were performed for each of the four forms of bullying as; physical, verbal, relational, others and total. In each of the four multinomial logistic regressions, the bullying classification was the outcome variable, with non-involved as the reference category, and with area, gender and grade variables as predictors. The odds ratios and their corresponding 95% confidence intervals from the multivariate analyses are reported in Table 4.

Paragraph that tells nothing

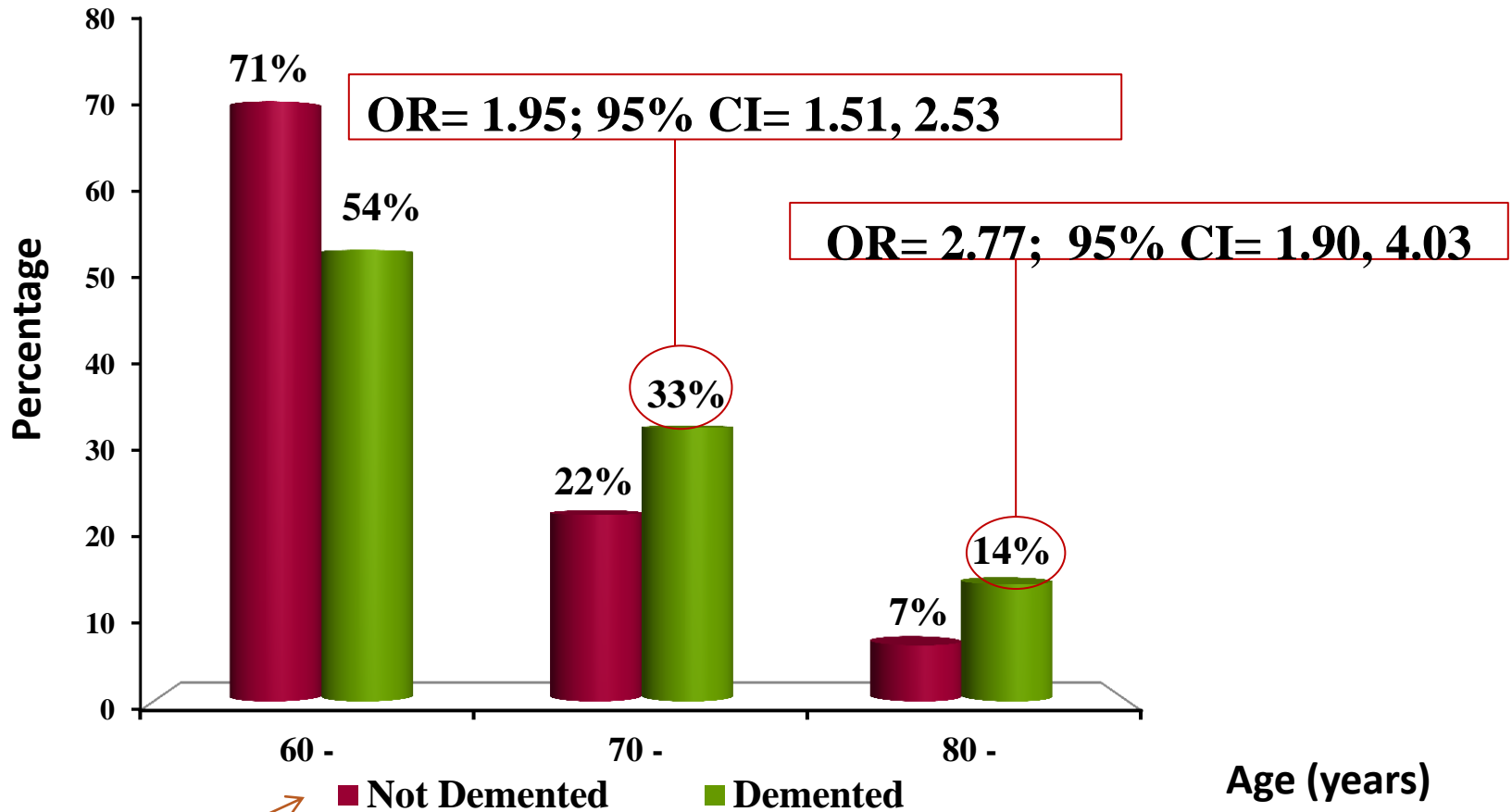
- It is a summary of the findings not for presentation of raw data
- Avoid duplication of information in tables and graphs
- Table and graphs should be complete and informative without the need to refer to the text: number, title, footnote and content
- Pay attention to the decimals associated with percent, mean, standard deviation, OR and CI
- Each table and graph should be presented in a separate page and not wrapped between text

Risk of incontinence among [..] by sex in Al-Dakhliyah [..]

Table 18. Results of screening of elderly population for incontinence in Al-Dakhliyah governorate, 2008-2010

Incontinence	Men		Women		Total		OR	95% CI	
	No	%	No	%	No	%		LL	UL
Incontinence	n=816		n=864		n=1680				
Absent	742	90.93	804	93.06	1546	92.02	1.00		
Probably	28	3.43	19	2.20	47	2.80	0.63	0.347	1.131
Present [†]	46	5.64	41	4.75	87	5.18	0.82	0.534	1.268
Urge symptoms	21	45.65	19	46.34	40	45.98			
Urge incontinence	17	36.96	9	21.95	26	29.89			
Urine/fecal incontinence	0	0.00	5	12.20	5	5.75			
Stress incontinence	9	19.57	8	19.51	17	19.54			

[†] Categories are not mutually exclusive



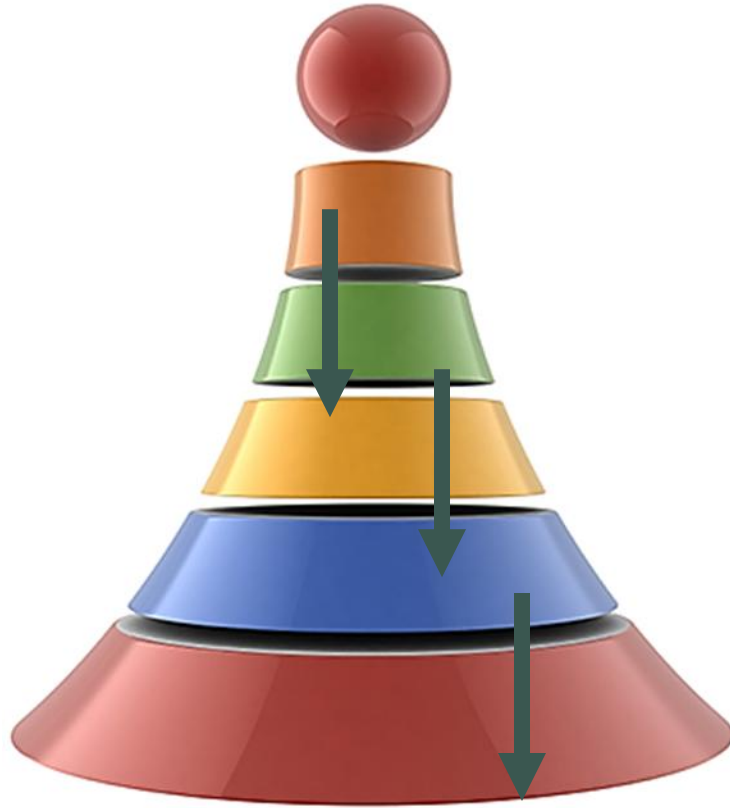
Legend

Rate of dementia among elderly people in relation to age

Title

- It is about interpretation of the results [why] in view of others' results and how they are going to be used [significance and implication]
- It makes use of others' findings (primary articles) to support the idea or the argument
- Ends by a conclusion within the scope of the work
- Includes limitations as constraints of the current study, reasons for negative [or positive] unexpected findings, unanswered questions
- Includes recommendations for future research in specific areas and the reason for this recommendation

- Restating the results
- Telling the reader your findings are comparable [to whom] and different [from whom] then [period] but explaining the significance of differences and similarities
- Overgeneralization



Interpretation of data
In relation to objectives



Interpreting others findings



End by the concepts used
In the introduction

- List of sources cited in introduction & discussion
- Usually other journal articles
- Previous studies in same field

- Citation styles differ depending on Journal
(Vancouver or APA style)

Herbst AL, Ulfelder H, Poskanzer DC. Adenocarcinoma of the vagina.: Association of maternal stilbestrol therapy with tumor appearance in young women. New England Journal of Medicine 1971;284(16):878-81.

- Author name
- Article's title
- Journal name
- Volume Number
- Issue Number
- Pages

- Thanking individuals or agencies (funding)
- Thanking for special contribution
- Individuals acknowledged are not the authors
- Acknowledgment for specific contribution not on emotional basis

- Write short sentences
- Use a spell checkers
- Use non-sexist language and third person language
- Keep the past tense except for the discussion use the present tense
- Use an active voice [with exceptions]
- Avoid “difficult” words
- Avoid the use of indefinite “this”
- Avoid “Jargon” by using precise words
- Use thesaurus for synonyms
- Avoid empty sentences and empty paragraph
- Omit unnecessary words [really, very, highly, clearly]



- The interview was completed by participants in 15 minutes
- Participants completed the interview in 15 minutes



USE ACTIVE VOICE

- Not necessary to mention the actor: E.g. A self administered questionnaire was designed for data collection.
- The person acted upon is more important: E.g. 100 child died as a result of an attack of an armed gang on a school bus.

USE OF PASSIVE VOICE

- The reason for the high rate of diarrhea is ~~because of~~ the low level of hygiene 
- The reason for the high rate of diarrhea is the low level of hygiene 

ELIMINATE UNNECESSARY WORDS

- A ~~small number~~ of patients refused testing
- Blood pressure reached ~~high levels~~.



- 1% of the patients refused testing.
- Blood pressure exceeded 170/110



USE PRECISE WORDS

- A small number of patients refused testing
- Blood pressure reached high levels.



- 1% of the patients refused testing.
- Blood pressure exceeded 170/110



USE PRECISE WORDS

- Don't use abbreviation unless the term is repeated three times (PLWHA)
- The term should appear complete when used for the first time followed by its abbreviation between brackets
- Use the abbreviation when the term is used afterwards
- Thesis and report should include a list of abbreviation

A well-written scientific paper

1. Explains the motives for doing the research, the methods used, its execution, and the implication of the results
2. Its is concise and informative
3. Its style is simple and clear
4. Its purpose is to inform readers and to document a particular approach to investigate the issue and to an answer the research question.