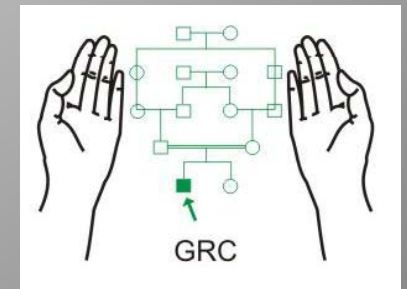# *Documentation of Research*
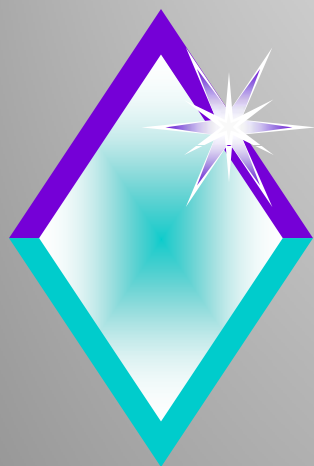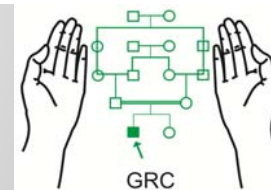
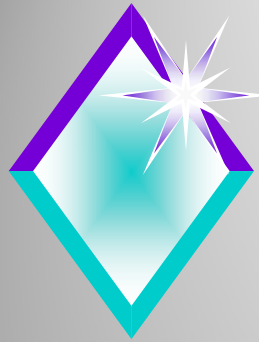*Maj Gen (R) Suhaib Ahmed, HI (M)*

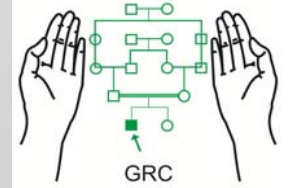*MBBS; MCPS; FCPS (Pak); PhD (London)*
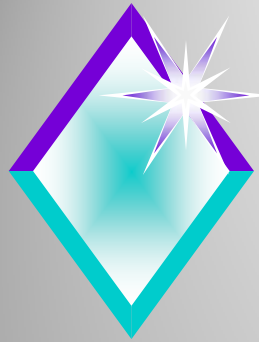
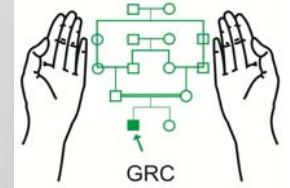*Genetics Resource Centre (GRC)*

www.grcpk.com

Combining art with science

Types of Medical Writing
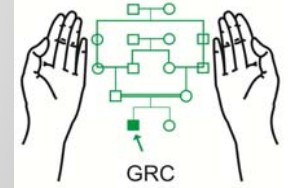
- Research Proposal (Synopsis)
- Original Article
- Thesis
- Dissertation
- Short Report
- Case Report
- Editorial
- Review Article
- Letter to Editor
- Patient Education Handout

Types of Medical Writing

- ◆ Research Proposal (Synopsis)
- ◆ Original Article
- ◆ Thesis

Research Proposal (Synopsis)

- Introduction and Review of Literature
- Hypothesis
- Objectives
- Operational Definitions
- Study Design
- Setting and Duration of Study
- Sample Size
- Sampling Technique
  - Inclusion Criteria
  - Exclusion Criteria
- Data Collection Procedure
  - Study Variables
- Statistical Analysis
- Consent Form and Ethical Review
- Budget Estimates
- References
- Data Collection Instrument
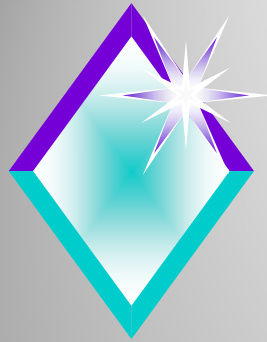
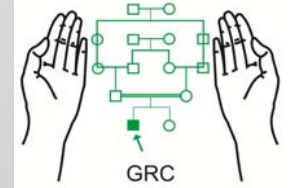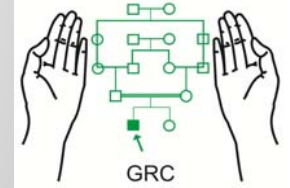# *Original Article and Thesis*

◆ Difference between an original article and thesis is the size of the document

◆ In a paper each section should be precise and to the point

◆ In a thesis the researcher has the liberty to give more elaborate description of the work

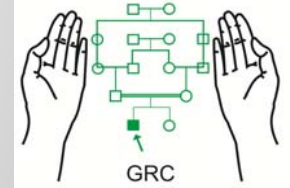◆ Written in past tense and third person form of address

The Format

- ◆ Title
- ◆ Introduction
- ◆ Material & Methods
- ◆ Results
- ◆ Discussion
- ◆ Acknowledgements
- ◆ References

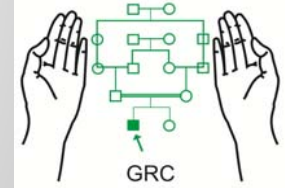# *Title*

◆ Should be specific but comprehensive

◆ Short but sufficiently descriptive

◆ No abbreviations

◆ Should be easy to catalogue

Introduction

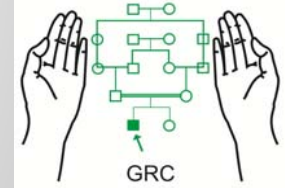## *Should include*

- Existing state of the knowledge

- Gaps in the knowledge that the research will fill

- What the research intends to do

- Pertinent references

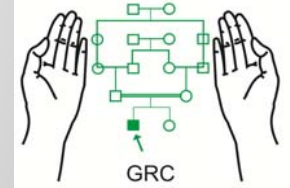## *Should not include*

- Other gaps in the knowledge

Materials/Patients/Subjects

◆ Study Design?

◆ Setting

◆ Duration

◆ Clear description of the material/patients/subjects

    ◆ Number

    ◆ Who they were?

    ◆ How they were selected/chosen?

    ◆ How they were grouped?

    ◆ Consent

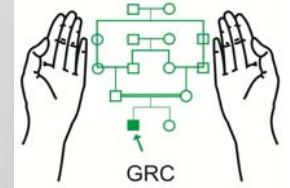   ◆ Archival material?

◆ Ethical review

Methods

- ◆ Description of methods that led to the results
- ◆ Give enough technical details for readers to assess the validity of the results, and reproduce them if required
- ◆ If standard technique is used, give appropriate reference, any modifications should be clearly explained
- ◆ If a proprietary name of drug or reagent kit is used give the brand and the manufacturer name
- ◆ Statistical methods used for analysis
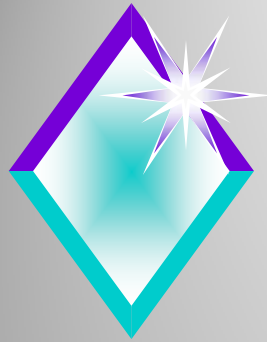
Statistical Analysis

◆ Means, ranges, and standard deviations were calculated for the continuous variables with normal distribution.

◆ Confidence intervals and hypothesis testing for the data with normal and abnormal distribution were calculated/done by parametric and non-parametric tests respectively.

◆ A computer package "??? version ?" was used for the statistical analysis.

Results
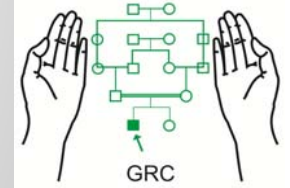
- Measurements and observations gathered by the author
  - Text
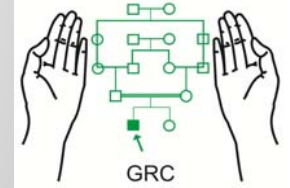 - Tables
  - Graphs
  - Histograms
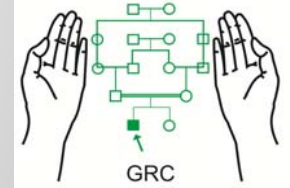 - Figures
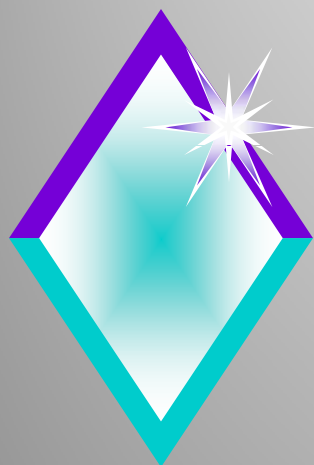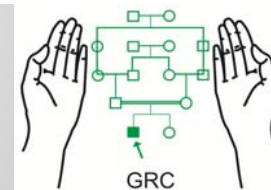
Discussion

What am I going to write here?

Discussion

- Go through the results several times
- Mark the significant findings
- Start discussion with a general statement and then go on to the specific points
- Discuss the significance of your findings (and not of the others !)
- Give explanation for any unusual results (facts or artifacts?)
- Compare your results with other studies only if it is relevant
- PLEASE do not repeat your results in the discussion
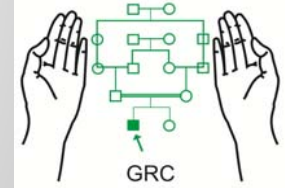- May suggest any future guidelines

Acknowledgements

- "We wish to thank" - all those who deserve recognition for their contribution but who have not made a significant intellectual contribution to be included as authors
  - Colleagues
  - Institutions
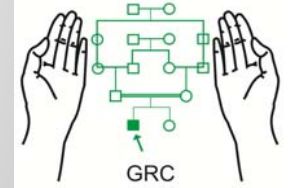 - Organizations providing financial help
 - Laboratory
  - Secretarial staff

References

- Source
  - Original article for:
    - Results
    - Methods
  - Review article
  - Book
  - Others
- Style?

Authorship

- Authorship credit should be based on substantial contribution to:
  - Conception
  - Design
  - Analysis & interpretation of data
- Participating solely in acquisition of funding, collection of data does not justify authorship
- General supervision of research group is not sufficient for authorship
- Order of the author should be a joint decision of the authors
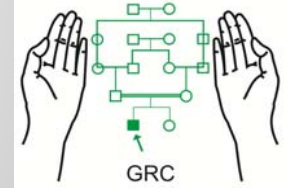
Journal Impact Factor

- ◆ Number of citations in the current year to any items published in a journal in the previous 2 years

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- ◆ Total number of articles published in the same 2 years