

WACS GUIDELINES FOR RESEARCH PROPOSAL AND DISSERTATION WRITING

JULY 2024

BROAD GUIDELINES FOR RESEARCH PROPOSAL AND DISSERTATION

1. Times New Roman Font.
2. Font Size 12.
3. Double Spacing.
4. 2.5cm (1inch) Margin on Each Side of Paper.
5. A4 Paper Size.
6. IMRAD Format for Dissertation
(Introduction, Materials & Methods,
Results, Analysis of Data, Discussion,
Conclusion, Recommendations,
References).
7. IMRAD is preceded by the Title and
Abstract
8. Page numbering up to Table of Contents
should be in Roman Numeral while it
should be in Arabic Numeral from the
Summary to List of References.

9. All Dissertations for WACS Fellowship Examinations must be preceded by an Approved Proposal by WACS and ethical approval from the Institutional Review Board/Ethical Committee.
 10. Attestation Page must be signed and dated by the Supervisors with the appropriate Fellowship Qualifications stated. (Photocopy is not allowed).
 11. If there is only one Supervisor, the person must be a Fellow of the WACS.
 12. If there are two or more Supervisors, the Lead Supervisor must be a Fellow of the WACS without prejudice to the requirements of individual Faculties as specified in their curricula.
 13. Research Proposals should be submitted electronically on the College portal.
 14. Dissertation for initial College assessment should be submitted to WACS via email on the College portal.
- Final dissertation for defence shall be submitted via email on the College portal.

- Clean copy of corrected dissertation after successful defence shall be submitted electronically on the College portal.

GUIDELINES FOR RESEARCH PROPOSAL

Research Proposal should consist of the following:

1. Title Page
2. The Title should contain the problem, the subset and the context and a maximum of 25 words.
3. Declaration Page signed and dated by the Candidate.
4. Attestation Page signed and dated by Supervisors with Fellowship Qualifications stated.

5. Attestation Page should be signed and dated by the Head of Training Department with Medical Qualification stated.
6. Acknowledgement.
7. Table of Contents.
8. List of Tables.
9. List of Figures.
10. Structured Abstract (Background; Aim; Methods; Proposed Data Analysis Plan) - maximum of 500 words.
11. Introduction (1000-1200 words) including the background, statement of the problem and the Research Question.
Research Question (not more than 20 words) – Research Question is key - it is the motivation for the study and it is derived from the weaknesses of the study design, gaps in knowledge, unanswered questions and other limitations identified from the manuscripts read during extensive literature review and critique. Again, the Research Question is key to a successful research and dissertation writing. The Research Question determines the title, the aim (general

objective) and specific objectives, the hypotheses, the results and discussion and conclusions. It is the linchpin of every research process and guides the writing of the various parts of the manuscript in order to ensure internal consistency. It is a question and so ends with a question mark.

12. Literature Review (Including Justification; it is a critique analysis and not a copy-and-paste exercise): 6000-9000 words.

13. Aim and Objectives (Including Major & Minor Objectives): maximum of 1000 words. Aim is general objective, the umbrella goal; there shall also be specific objectives of the study.

Hypotheses - Null hypothesis and Alternate hypothesis (and there may be Sub-Hypotheses).

14. Materials and Methods: 4000-5000 words (it starts by stating the problem, the subset and the context studied, the details of the methodology and proposed Data Analysis Plan); Sample size determination, sampling method to be used in the research. New equipment and new reagents to be used should be referenced.

11. Show evidence of obtaining ethical clearance from the Institutional Research Board/Ethical Review Committee. Ethical clearance is better obtained after the College has approved the proposal as the review process of the College may lead to major changes, including alteration of the title, which would require re-application to the institution for ethical clearance.

Ethical conduct of research is mandatory – data collection should only commence after the research proposal has been approved by WACS and ethical clearance obtained from the institution.

Statement on Informed Consent from Subjects/Patients and Approval plan by a Recognized Institutional Ethical Review Board; Study period should be clearly stated).

Data Analysis Plan: 1000 – 1500 words. A biostatistician should be engaged from the conception of the research to ensure that the appropriate and credible study design, sample size estimation, sampling method, interpretation of data after data collection are applied from the outset.

12. List of References.
13. Appendices (the study protocol/proforma, consent form, etc).

Title Page

- ♣ Running title containing a maximum of ten words (maximum of 100 characters including spaces for the electronic version).
- ♣ Title of Research Project containing a maximum of 25 words (or maximum of

200 characters including spaces for the electronic version).

- ♣ Name of candidate, basic medical degree and awarding institution.

♣ Statement on submission to WACS.

♣ Month/Year in view for examination defence of dissertation.

Abstract

♣ Structured Abstract(Background; Aim; Methodology; Data Analysis Plan): maximum 500 words.

♣ Key Words (Maximum of 5-8 words or phrases separated by commas, the first letter is capitalised).

Introduction (1000-1200 words) :

- Under these sub-headings: Background, Statement of the problem and the Research Question.

- State the problem clearly, its distribution worldwide, in the continent, region and country with references.
 - State what is currently being done to solve the problem
 - State the gaps in knowledge, treatment and practice, the limitations and the unanswered questions which formed the motivation for the research (the research question)
- ♣ Cite previous studies on the subject matter with appropriate references both in support as well as those with divergent views but also explain why the divergence which may be from the study design, sample size, the subset studied, the context etc.
- ♣ Aim(general objective) of the research project should be clearly stated in the last paragraph also indicating the problem, subset, context and the duration of the study.

Statement of the problem

Research Question

Literature Review (6000-9000 words)

- ♣ Detailed overview of research studies that have already been published on the subject with appropriate citing of the references.
- The researcher via comprehensive literature review becomes very knowledgeable on the subject and should be able to speak to it. Literature review should be updated after data collection to ensure that the researcher is up to date with the new publications published during the research process.
- ♣ Tables and figures should not be included in the Literature Review.
- ♣ Should be well researched and of reasonable length, in terms of the number of pages.
- The articles referenced should be critiqued, not copy and paste and correctly cited in keeping with Vancouver style.
- ♣ Justification: Reason why research project is considered necessary and beneficial.

Aim and Objectives(maximum 1000 words)

* Aim – aim is the general objective, the umbrella goal.

♣ Major and Minor specific Objectives should be stated.

♣ Hypotheses (Null and Alternate hypotheses)and Sub-Hypotheses.

Materials and Methods(4000-5000 words)

♣ ♣ ♣ ♣ ♣

State clearly the problem, subset studied, the context(environment) and duration of the study.

Statement on informed consent from subjects or patients.

Sample size determination. Sampling method to avoid bias.

Approval by a Recognized Ethical Review Committee better obtained after approval of the research by the College.

Study period should be clearly stated in terms of commencement and termination month / year.

Inclusion and Exclusion Criteria.

Appropriate study design should be used.

Data Analysis Plan(1000-1500 words)

- ♣ Appropriate statistical method for data analysis using statistical packages such as SPSS, Epi Info, STATA etc and the version used should be stated including the year.

- ♣ Tools are software e.g. EPI Info.

- ♣ Methods are Statistics e.g. Chi Square Test.

Listing of References

- ♣ Vancouver Style should be used to cite references in the Body of the Text (as Superscript) and also in the List of References.

Appendices

- ♣ Specimen of project proforma/questionnaire.

*Flow chart to show the algorithm of the proposed research and dissertation.

♣ Specimen of written informed consent to subjects and patients.

♣ Copy of approval by a Recognized Ethical Review Committee if already obtained.

GUIDELINES FOR DISSERTATION

Dissertation should consist of the following:

1. Cover Page (To include: Full Title of the work; Full Name of Author; Basic Medical Degree;

Faculty; Month/Year of Exam in View).

2. Title Page.

3. Declaration Page signed and dated by the Candidate.

4. Attestation Page signed and dated by Supervisor(s) with the appropriate Fellowship Qualification(s) stated.

5. Attestation Page signed and dated by the Head of Training Department with Medical

Qualification stated.

6.Acknowledgements.

7.Table of Contents.

8.List of Tables.

9.List of Figures.

10. Building blocks of the Dissertation:
Abstract (Structured Abstract); Chapter 1:
Introduction including statement of the
problem and the research question;
Chapter 2: Literature Review including
justification; Chapter 3: Aim & Objectives
and hypotheses; Chapter 4: Materials &
Methods; Chapter 5: Results; Chapter 6:
Discussion; Chapter 7: Conclusion &
Recommendations and References.

11. Structured Abstract (Background;
Aim; Methods; Results; Conclusion):
maximum 500 words.

12. Introduction: 1000-1200 words.

13. Literature Review (Including
Justification): 6000-9000 words.

14. Aim and Objectives (Including Major & Minor specific Objectives) as well as Hypotheses and

Sub-Hypotheses: maximum 1000 words.

15. Materials and Methods: 4000-5000 words (Including Method of Data Analysis; There must be a

statement on informed consent from subjects/patients and Approval by a Recognized Ethical Review Committee; Study period should be clearly stated in terms Commencement / Termination Month / Year).

16. Results: 4000-6000 words.

17. Discussion: 4000-6000 words.

18. Conclusion: maximum 500 words.

19. Recommendation: maximum 500 words.

20. List of References.

21. Appendices.

Title Page

- ♣ Running title containing a maximum of ten words (maximum of 100 characters including spaces for the electronic version).
- ♣ Title of Research Project containing a maximum of 25 words (maximum of 200 characters including spaces for the electronic version).
- ♣ Name of candidate, basic medical degree and awarding institution.
- ♣ Statement on submission to WACS.

♣ Month/Year in view for examination defence of dissertation.

Abstract

- ♣ Structured abstract (Background, Aim; Methodology; Results; Conclusion).
- ♣ Maximum of 500 words.

♣ Key Words (Maximum of 5-8 Words or phrases).

Introduction

* State clearly the problem under study and its distribution – in other continents, Africa, West Africa, and in the country and region of study.

♣ State the previous studies on the subject matter with appropriate references.

*What is presently being done to treat and control the problem.

*State the gap in knowledge, in treatment, the limitations, the unanswered questions

♣ Purpose(aim/general objective) of the research project should be clearly stated in the last paragraph.

*Statement of the problem

*Research Question

Literature Review

- ♣ Detailed overview of research studies that have already been published on the subject.

- ♣ Tables and figures should not be included in the Literature Review.

- ♣ Should be well researched and of reasonable length, in terms of the number of pages.

*Itemize the gaps in knowledge/treatment, unanswered questions and limitations observed in the literature review – they will form the Research Question, the aim (general objective), specific objectives and the hypotheses of the study.

- ♣ Justification: Reason why research project is considered necessary and beneficial.

*Research Question is repeated to emphasize its cardinal place in scientific research and dissertation writing.

Aim and Objectives

♣ General objective(Aim) and Specific Objectives should be stated. General objective is the same as the Aim of the study.

♣ Hypotheses (Null and Alternate) and Sub-Hypotheses.

Materials and Methods

♣ ♣ ♣ ♣ ♣

♣

State the problem, subset, context.

Study location should be stated with the duration of study clearly indicated.

Sample size determination.

Appropriate study design

Statement on informed consent from subjects or patients.

Approval by Ethical Review Committee of Training Institution.

Study period should be clearly stated in terms of commencement and termination month / year.

Inclusion and Exclusion Criteria.

Method of Data Analysis

- ♣ Statistical package for data analysis e.g. SPSS should be stated where applicable.
- ♣ Tools are software e.g. EPI Info.
- ♣ Methods are Statistics e.g. Chi Square Test Statistical values obtained using the appropriate tools such as chi square, t-test etc and indicate whether the data are parametric or non-parametric.

Results

Results should be presented in prose, graphs, charts and images(figures)

- ♣ Detailed analysis of results obtained.
- ♣ Percentages to be expressed to the first decimal place.
- ♣ Results should be written in reported speech (past tense).

* Only accurate, honest and verifiable data are included in the results section. Plagiarism is forbidden.

*The Results section should be studied with figures and their percentages.

*Means and their standard deviations should be expressed in this way: mean+/-standard deviation.

- ♣ Tables – the title should be on top of the table.
- ♣ Figures – the title should be placed under the figure.
- ♣ All tables must be referred to in the text of the Results Chapter.
- ♣ All figures must be referred to in the text of the Results Chapter.

*Tables used in biomedical literature should not have vertical lines. Only three horizontal lines are allowed – two horizontal lines at the top to enclose the variables while the third horizontal line is at the bottom to end the table.

Discussion

- ♣ ▪State the main findings clearly.
- Summary of major new findings or new knowledge determined from the research.
- ♣ ▪Detailed comparison of the results obtained from the study with those of previous studies.

State the implications (usefulness of the findings) supported with references.

State the strength and weaknesses of the study design

Reference all the above.

- ♣ ▪Important areas of agreement or differences with previous studies should be

stated and the reasons for the different or divergent findings identified and documented.

- ♣ Any statement not belonging to the author or from the current study should be supported with appropriately cited references.

Limitations of the study including weaknesses of the study design, unexpected challenges, and unanswered questions.

Conclusion

Conclusion is what can be said for certain based on the results of the index research while recommendation is what should be done to obtain better outcomes.

- ♣ Statement on inferences drawn from the study.

Recommendations

♣ Statement(s) on useful advice emanating from results obtained in the study.

Conclusions and recommendations are restricted to the research question, the title, objectives and results of the study.

Listing of References

♣ Vancouver Style should be used to list references in the Body of the Text (as Superscript) and also in the List of References.

Only relevant references that address the problem should be included.

Reference Managers such as Mendeley could be useful.

Appendices

♣ Specimen of project questionnaire/proforma.

♣ Specimen of written informed consent to subjects and patients.

♣ Copy of approval by a recognized Ethical Review Committee.

*Flow chart showing the algorithm used to conduct the research and writing the dissertation.

There shall be a plagiarism check on the dissertation.

Considering the diverse nature of the eight constituent Faculties of the WACS, it is obvious that the broad guidelines for proposal and dissertation have to be tailored to suit the individual Faculties. For example, because of the prominent role anatomy and technique play in the training of radiologists, radiation and clinical oncologists, there should be a chapter on Gross Anatomy and Imaging Modality Anatomy of the subject matter before Literature Review.