

THESIS WRITING

General Information:

Thesis is a detailed discourse on a subject especially submitted for a higher degree in a University (Oxford Dictionary).

The UNIVESITY thesis is a document that contains relevant details of the research work conducted by the fellowship trainee relating to the problem selected. The objective of writing a thesis is to develop skills in trainees for:

- Collection and compilation of data,
- Analyzing and reviewing relevant literature available on the subject (both national and international),
- Developing medical writing habits as an art for writing scientific articles in medical journals.

The other advantages of writing a thesis include:

- Cultivating an inquiring mind
- Encouraging in depth study of common problems afflicting our people
- Generation of scientific data locally
- Keeping abreast of new developments locally and abroad
- Understanding the fundamentals of research

Rules and Requirements: To prepare a thesis acceptable to the UNIVESITY, the rules and requirements prescribed below must be followed while writing.

Approval:

- The research work or study must be started after receiving the approval of synopsis / research protocol from the UNIVESITY.
- The research work or study must be planned in such a way that the entire study, including thesis writing, is completed during the training period.
- The topic and research methodology must be the same as laid down in the synopsis/research protocol approved by the UNIVESITY.
- Patients in the photograph(s), if included in the thesis, must not be identifiable or the photographs must be accompanied with a written consent of the patients. Colored photographs are to be preferred.
- Photomicrographs, if included in the thesis, must have internal scale markers and symbols, arrows or letters in contrast to the background.
- If tables, figures, diagrams, photographs, photomicrographs or any other type of illustrations are reproduced from published literature, they must be properly acknowledged in the thesis.
- Only standards terms and abbreviations must be used if needed in the thesis. When using for the first time, a full word or phrase, together with its abbreviation in bracket (except for

standard measurement units), must be mentioned. A list of all abbreviations used in the text must also be attached in the thesis .

- The information about patients such as names, initials or hospital numbers must be kept confidential, especially in illustrative material.

Contents:

- It is essential that a minimum of one third contents of the thesis should be from the trainee's own research work or study.
- The statistical tests mentioned in the thesis must have proper references to enable an assessor or reader to verify the reported results. Statistical terms, abbreviations and symbols must be defined. Any computer program, if used, must also be specified.
- The illustrations in the thesis must be accurately drawn, on separate pages and numbered serially. Each figure / diagram must have a legend. Free hand lettering is not accepted.
- Measurement, units of length, height, weight and volume mentioned in the thesis must be in metric system i.e., meter, kilogram and liter.

Format:

- Each section of the thesis must be started on a new page.
- The section in part 1, from "Dedication" upto the list of "Abbreviation", should be serially numbered in Roman number while the rest should be serially numbered in Arabic numerals.
- The thesis must contain 15,000 to 20,000 words i.e., about 80-100 A4 size pages, typed or computer-printed with double space, on one side of each page.
- It must have 4-cm margin, at all 4 sides of each page.
- All pages must have serial numbers at upper right hand corner.
- It must not contain any typographical errors or spelling mistakes.
- The font size should be 12.
- Font should be Times New Roman or Arial or Verdana.

Language:

- The writing of thesis must be planned in such a way that continuity of the theme is maintained.
- It must be written in trainee's own words and style. The language must be simple, direct and precise. Verbosity must be avoided.
- Direct quotations must be minimally used. If quoted, these must be given within inverted commas with full acknowledgment.
- The statements, other than trainee's own, must be supported with reference citation.
- The trainee, who plagiarizes or copies someone else's thesis, will be liable for a disciplinary action by UNIVESITY, which may include debarring him/her from appearing in university examination for lifetime.
- Each table must be typed or computer-printed with double space, on a separate page. It must be numbered consecutively, in order of citation and inserted at the appropriate place

in the text. Symbols and abbreviations, if used, must be explained in the footnote of each table.

Submission:

- Certified copies of thesis must be submitted to UNIVESITY, through the Supervisor for assessment and approval.
- The thesis must be secured with spiral binding.
- The UNIVESITY will get it bound permanently after acceptance.
- The thesis must be submitted along with the paid bank challan or a bank draft / pay order issued in the name of UNIVESITY, on account of thesis fee.
- Once the thesis is submitted to UNIVESITY, it must not be submitted to any other institution for a postgraduate diploma or degree. Violation of this rule, will render the trainee liable to punitive action by UNIVESITY, which may include cancellation of degree.

FORMAT OF THESIS :

The different sections in the part I and II of the theses are formatted as per description given below.

1) Sections in Part I.

i Title Page

It is the very first page of thesis. The title is a concise statement identifying actual variables or theoretical issues under investigation and the relation between them. A title should be in minimum possible words that adequately describes the contents of research work/study all the words in the title are to be chosen with great care and the association with one another properly sequenced. This is also important for indexing the study. The title does not contain any abbreviation, chemical formulae, proprietary names and jargons etc.

The title should be written on the top in bold letters, followed by full name of trainee in the order of first, middle, initial and last name along with the highest academic degree. Then full name of Supervisor is mentioned under whom the entire research work/study has been completed together with his/her highest academic degree. At the bottom the name of department and institution is to be given, where research work/study has been conducted. The date of submitting thesis is given at the lowest end of the title page.

ii. Supervisor's Certificate

It is placed after the acknowledgement and is numbered in the Roman numeral.

iii. Dedication

It is an optional section, in which trainees normally dedicate their thesis to their parents, brother, sister, teachers, friends, spouses and/or children. The dedication is written in the center of a separate page in one or two lines and numbered in Roman numerals.

iv. Acknowledgement

This section is designed to offer thanks or appreciation to the efforts of individuals or organizations for help, advice or financial and material assistance extended by them during the research work/study. The trainees should not forget to mention the names of other colleagues, technical persons the computer operator and spouse, if applicable, as well as the supervisor. This is the best place to show gratitude and appreciation. Technical help and other contributions like financial and material support are acknowledged in a separate paragraph.

v. Table of Contents

It is an important section of part I that contains the main headings of the text in the thesis, annexes and page numbers in Arabic and Roman numerals. Sub-headings are also used where necessary. Table of contents is written on separate page(s) and numbered in Roman numerals.

vi. List of Tables

All the tables of thesis are listed together with titles and page numbers in this section. It is written on separate page(s) and numbered in Roman numerals.

vii. List of Figures / Graphs / Illustrations

All the figures, graphs and illustrations drawn for the thesis are listed with titles and page numbers in this section. It is written on a separate page and duly numbered in Roman numerals.

viii. List of Abbreviations

A list of all the abbreviations used in the thesis along with full words is written on separate page(s) and numbered in Roman numerals. Only standard abbreviations are used in the thesis.

2) Sections of Part II:

i. Structured Abstract

It is the first section of the thesis. The abstract is a brief account of the thesis, summarizing the information given in each major section. It is different from the conclusion and identifies the basic contents of the thesis. It is written in past tense, emphasizing on important aspects of the thesis. The abstract is around 250 words written under the following headings:

- Introduction
- Objectives
- Main outcome measures
- Study design
- Setting
- Subjects
- Methods

- Results
- Conclusions.

At the end of abstract, three to ten (3-10) key words are identified and written. Selected key words should be from the Medical Subject Headings (MeSH), List of Index

ii. Introduction

It is second section of the thesis that presents the specific problem under study and reflects:

- The importance of the topic selected
- The rationale of the study and discusses the background.

Before writing introduction in the thesis, the trainee should study relevant literature retrieved from published papers. Relevant articles are selected, which improve the understanding of the topic. Only pertinent references are cited but not extensively reviewed in this section. Rationale of the study should be mentioned at the end of introduction.

iii. Review of Literature

Review of the literature is essential. A comprehensive review of the current status of knowledge on the selected topic must be included. It should be a collective review and critique in the candidate's own words of various viewpoints supported by relevant data, and should not be copied from published work. The review should be properly referenced. References should preferably be of the last five years, including some published in the recent past. However, older references can be cited provided they are relevant and historical. It is essential to also include a review of the local literature. A special effort should be made to collect and review all work done in Pakistan on the chosen topic. This should include work published in recognized journals and in publications of various societies and medical colleges, as well as abstracts of meetings, conferences or seminars held in Pakistan or abroad. Data collected by others, whether published or unpublished, must be acknowledged whenever included.

iv. Objectives

Objectives are statements of intentions. They inform the reader clearly what the researcher plans to do in his/her work. They must identify the variables involved in research. Objective should start with an action verb and be sufficiently specific, measurable, achievable, relevant and time bound (SMART).

v. Operational Definitions:

May be required in some cases. It is definition of a term specifically telling how it will be measured for e.g.:

a. *Morbidity*: this encompass a number of aspects viz. prolonged hospital stay, severe pain, immediate complications, long term sequelae. A research must define how a vague term will be measured.

b. *Efficacy*: These can be measured:

i. Time taken in relief of symptoms which may be pain, fever cough heartburn etc.

ii. Taking into account number of side effects.

iii. Time taken for complete recovery. Student is required to specify how he/she will measure efficacy.

vi. Hypothesis:

A hypothesis is a statement showing expected relation between two variables. A hypothesis is needed in the following study designs:

- All interventional studies
- Cohort
- Case control
- Comparative cross sectional.

vii. Material and Methods:

SETTING: Name and place where the research work has been conducted – community based or facility based (e.g. hospital, laboratory).

DURATION OF STUDY: How long did the study take.

SAMPLE SIZE: how many patients were included. If there were groups how many per group?

SAMPLING TECHNIQUE: Probability or Non probability.

SAMPLE SELECTION:

Inclusion criteria: on what bases were patients inducted in the study.

Exclusion criteria: on what bases were patients be excluded from the study.

STUDY DESIGN: Mention the name of the appropriate study design.

DATA COLLECTION PROCEDURE: a detailed explanation of how the researcher performed research; how s/he measured the variable. It includes:

Identification of the study variables

Methods for collection of data

Data collection tools (proforma/ questionnaire)

DATA ANALYSIS PLAN: A brief statement about what statistical procedures have been used. The exact name of the software and its version used must also be mentioned.

REFERENCES : in Vancouver style

PROFORMA(S): must be according to the objectives

viii. Results

The results should be in logical sequence with the main results being stated first. The data should be reported in sufficient detail to justify the conclusions. The results section should include the:

- Number of subjects in the study at its inception.
- Statistics describing the study population, and the number of subjects who were excluded.
- Number of subjects dropped out, or lost at any point in the study.
- To illustrate the main effects, the data should be presented in appropriate tables and figures.
- Data in tables or figures should not be repeated in the text where only important observations should be summarized.
- When data is statistically analyzed, information should be included about the tests of significance (such as chi-square or t-test) used, obtained magnitude or value of the test, the degrees of freedom, the probability level. Results should be presented in terms of confidence intervals wherever possible.
- If one statistical test has been used throughout the manuscript, the test should be clearly stated in the methods section. If more than one statistical test has been used, the statistical tests performed should be discussed in the methods and the specific test used reported along with the results.

ix. Discussion

The writing skills of a trainee are best projected in this section of the thesis. It is meant to fit the results of current research work into pre-existing pool of knowledge.

- If a hypothesis existed, whether the hypothesis was supported or refuted by the results should be addressed.
- The results of the study should be examined and interpreted, and implications described.
- The limitations of the study should be discussed, including possible sources of bias and how these problems might affect conclusions and generalizability.
- The implications for clinical practice, in any specific directions for future research may be offered.
- Similarities and differences between the findings of the study and those of others should be brought out and explained through a review of the literature.
- The study results should be placed in context with published literature.

x. Conclusion(s)

This is the last section of the text in which conclusions or inferences drawn on the basis of the results of study are described. The conclusions should be linked with the objectives of the study. Recommendations for further research may be included when appropriate e.g. if you find a

statistically significant number of cases of anemia of severe degree in the school going girls of a particular area you can recommend further research to probe the cause of anemia in that area. It is important to be careful that the conclusions should not go beyond data and should be based on the study results and population.

xi. References

UNIVERSITY follows the Vancouver reference style. References are serially numbered in the order in which these are mentioned in the text e.g., for the first cited reference the trainee may either put "1" at superscript or in parenthesis at the most relevant place in the sentence. This reference will then be listed at serial number "1" in the References section of the thesis. The next reference will be marked as number "2" at superscript or in parenthesis and listed at number "2" in the References section and so on. References in the text, tables and legends are identified by Arabic numerals within parenthesis. Only reference of articles indexed/abstracted in Medline, Excerpta Medica, Extra-Med and those published in journals recognized by the Pakistan Medical & Dental Council may be listed. The trainee is expected to check all parts of each reference against the original publication, before the manuscript of the thesis is submitted.