

Review Article

How to Write a Research Project Synopsis or Protocol in Medical Sciences

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Abstract

In Medical sciences there are three main areas where the doctors join after completing their basic graduation, Majority join clinical practice, while modest number of the medical graduates adopt teaching jobs in medical education while very few go in medical research. The reason of this minority is that it not a luxury job, but they think that it is an essential need of any nation. To begin the research, everyone should know how to start the a,b,c of this field and must start from simple to complex and should be pursued by a broad level. We recommend research in all three fields of the medical sciences mentioned above, researchers should know the basic principles of the scientific method to understand the value and limitations of medical sciences and to be able to assess and evaluate results of research before applying them. The review article will open the door to enter in this field by writing a research proposal or research synopsis

Key words; Appendices, Abstract, Objective, Hypothesis, Medical sciences, Oxford, Harvard, Research Proposal, Synopsis, Vancouver,

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Introduction

“Medical Research is an essential need for any Nation but mostly ignored in developing countries”. Synopsis writing and manuscript writings are two main pillars in medical research, clinical practice and medical educations, so for that three things are very important, what you need to know, what you need to do and how much time you have to complete this journey.^{1,2}

Synopsis is a research proposal which means a thorough depiction of the projected study design to explore the proposed issue; simply, work plan of one’s Research Proposal being submitted to the compiyeny authorities for approval to proceed forward.³

Objective of the Synopsis

A protocol or a synopsis of a research project is a document submitted to an authority or an institution for the purpose of, scientific and ethical review of research, for degree registration, peer review and financial assistance.^{2,3}

Main components of the synopsis are, selection of title, abstract*, introduction*, problem analysis/literature review*, rationale of study, scope of study, objectives*, hypothesis*, research design and methodology*, refe-

rences*, budget *and appendix, Performa (including guidelines and questionnaire)*. Items denoted by star are to be encompassed in the synopsis and rest without star are to be included in final report of the project.^{1,4}

How to writ a Title page for Research synopsis

The first page of the synopsis comprises, the informational about your research, project title, name of the principal investigator (S), name of the supervisors& institution of affiliations with year of study. The second page must contain a small paragraph that the study is submitted for which degree, your detail and Name (sign) and supervisor detail and Name (sign); “*This is to certify that study..... conducted by Dr..... RTMC registration.....for PhD/FCPS/ MD/ Mphil/ MS, etc training in the speciality of..... here in your hospital, will be done for six months under my supervision....., signature of supervisor, designation of supervisor/Department of supervisor*”.

The topic must directly related to the major objective of the anticipated research, must be concisely descriptive, must be catchy, informative with an effective title which not only pin’s the interest of readers but also inclines one’s auspiciously in direction of proposals. It should

not be too long or too short, should be measurable, and addressing the population e.g., “Frequency of detection of Coronavirus infection pattern in children through polymerase chain reaction.” In this example frequency is measurable, and children are population, method of laboratory in mentions.^{4,5}

It shouldn't use too many unnecessary words and abbreviations, e.g., hasn't used PCR. It shouldn't tell the reader what is being studied, e.g., “Role of Ivermectin in the prophylaxis of Coronavirus infection”.

How to write an Abstract for Research synopsis

The abstract must be written at the end but should include after the title, it should address the major question of research, rationale and methodology; consisting study design, sampling, technique, procedures and data collection tool that will be used in study. The words of the abstract must be according the requirement of affiliated university however for conference should be ranged 150-1000 words, for master's thesis (150-300 words) and dissertation up to 350 words.^{3,4,6}

The objectives must be specific, measurable, achievable, realistic and time bound because researcher has to achieve the objectives of study. May be primary and secondary objectives, e.g., “To determine the frequency of isolation, sensitivity and resistance pattern of coronavirus infection among children subjected to nasal and throat swab through polymerase chain reaction.”^{2,3,7}

Introduction of the Synopsis

The first step of introduction is to tell the audience what your topic is, why it is important and consists of striking opening sentence that conveys the relevance of topic clearly. The introduction must contain, “background, statement of the problems, study rationale and significant of your study.” The introduction must classically start with background trailed towards statement of problem in clear and precise terminology followed by research question.^{1,2} or Specific research objectives. This part of the study must be written carefully because it will provide the whole story of the research project and the rationale of the research.¹

Note: The length of the introduction in the synopsis is not fixed and depends upon the relevance of synopsis. But try to be briefed up to 1-2 pages. Depending on the type of study MPhil, MD, MS, PhD or FCPS, you have to decide about the length of introduction of your synopsis.

Rationale and Hypothesis for Research synopsis

The rationale addresses the significance of your study and how your study will be beneficial for humanity, it corresponds with the background of the topic research study. The rationale of the study highlights the missing of gaps in the literature reviews how would your research

fill these gaps.¹

Hypothesis must be included if the study is interventional, cohort and case control while optional for observational studies, case reports and descriptive studies. A hypothesis is the statement related to show the relationship between 2 or more variables and is predictions of the outcomes from the study. Theoretical framework may be developed to show the cause and effect relationship of independent and dependent variables. Study limitations must be addressed.^{10,11}

Literature Review for Research synopsis

There must be included review of literature if synopsis is for MPhil or PhD. For FCPS, not required. It delivers the settings of the proposal and research question in a kind to demonstrate its need, significance and acquaint through existing awareness around the research question and prevent the duplication of work. The operational definitions are needed for FCPS synopsis, which means to standardize the definitions used in your study.^{1,8,9}

Methodology Data Collection, and Statistical analysis for Research synopsis

The research methodology includes all the details about the subjects of the study designs, methods and types of data collection, tools for data collection, types of statistics for data analysis. The most important portion of the synopsis is methods, which must include research design and settings, research subjects or participants (Sample size), type of Data (primary or secondary), what are the criteria for inclusion or selection? What are the criteria for exclusion?, what is the sampling procedure?, and will there be use of controls in your study? Data collection and data analysis are important tools of synopsis. There are following steps of data collections, Step I: Prior to data collection permission will be obtained from the Hospital authority.

Step II; The research scholar will provide their introduction followed by topics. Step III: Study subjects will be divide in to groups and assigned group by simple random sampling method. Step IV: Purpose of the study will be explained to acquire the informed consent from study subjects individually. Step V: Pre-designed knowledge questionnaire will be tested in both groups through pilot work. Step VI: Experimental group will be applied with self-instructional module. Step VII: Seven days following pre-test, a post test will be undertaken by using pre-designed knowledge questionnaire for both groups. Step VIII: The collected data will be analyzed and presented in tabulated and pictorial forms.

The main tools are questionnaires in the shape of appendices. The consent form must be signed by the population in their own language.^{12,13}

Note: The methodology and statistical analysis should

be the best possible option to achieve objective, reliable, and generalizable results and always consult a competent medical biostatistician, otherwise you will not be able to draw the inferential of your study based on your hypothesis.

Citing References

The last part of the synopsis are references and citations, either in Vancouver style, Oxford style or Harvard style. In Harvard style, must be written in this arrangement, author's name (three and then put et al) followed by its initials. (If there are 2 authors but and between two names). Put year of publication in Brackets. Then write the article title with single quotation mark followed by full stop. (' in the beginning and at the end'). Name of Journal in italic form. Volume followed by a comma. Issue no. in bracket. Page numbers e.g., Zaidi SH. (2003) 'creative writing in Coventry'. Journal of writing studies 3(2), 44-59. If you are using this style, write the names of authors and years in the texts and alphabetic arrangements at the end. In Vancouver styles, write the author's name followed by its initials (up to six and et.al if more than 6 authors). Then write article title with single quotation mark followed by full stop. Give the name of Journal in italic form, put year of publication; (Semicolon), put Colon (:) write the volume followed by bracket for volume and issue no. in bracket close with page numbers. e.g., "Liaw S, Hasan I, Wade, V, Canalese R, Kelaher M, Lau P, et al. Improving cultural respect to improve Aboriginal health in general practice: a multi-perspective pragmatic study. Aust Fam Physician. 2015;44(6):387-92.

These are given with Arabic numbers in the texts and at the end in reference sections

Last Compomets Appendices study tools lost.

The appendices are the study tools which contain supplementary material and not included in the main text of the synopsis. These tools are helpful in providing the comprehensive understanding of the research problem. These tools also provide the information which are not possible to be included in the body of the synopsis. You can include many appendices but always use a separate appendix for each set of data and distinct topic. The Appendices are given roman number like I,II,III,IV or in Arabic number 1.2.3.4 etc. The appendix will have a title according to the description of its contents. These include your methodology detail, raw data, master tables, maps, photographs etc. These are arranged sequentially by the order they were first referenced in the text i.e., appendix I should not refer to text on page 11 of your paper and Appendix II relate to text on 2.^{16,17}

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