



Avicenna Medical & Dental College, Lahore

Research Proposal

Department

Title

Keep the following points in focus when writing your study Title.

1. It should be concise (typically 10-15 words)
2. Descriptive enough to convey your topic clearly, and
3. Specific enough to differentiate your study from others.
4. Descriptive enough to convey your topic clearly, and specific enough to differentiate your study from others.

Principal investigator			
Email			
Degree		College	
Department		Mobile	

Other investigators:

PURPOSE OF STUDY:

Research background

1. Introduction: (Times New Roman, Bold)

The introduction should be in one page. It must contain citation/references from the relevant literature.

Rationale

The last paragraph of introduction should state rationale as well as research gap. While writing the rationale keep these points in focus

- Summarize Current Knowledge
- Identify the Gap
- Justify Your Approach
- Highlight Benefits

2. Literature Review

Literature review should be 2-3 pages in length. It should provide information on

- Background to the research topic
- Summarize existing knowledge
- Focus on similar study populations and methods
- Summarize Key Findings
- Mention limitations of previous studies
- Identify gaps in current research
- Justify the need for the study
- Include recent and relevant studies (at least 70%-80% of the references should be within 5 years of time frame)
- Identify unanswered questions
- Explain how your study addresses the gap
- Show how it adds new knowledge
- Clearly state the rationale for the research

AIMS AND OBJECTIVES:

The aim and objective of the study are:

Use SMART criteria while writing your objective:

S	M	A	R	T
Specific	Measureable	Achievable	Reproducible	Time Bound

- Make a single statement for your objective.
- Do not specify or subdivided your objective as primary and secondary objective
- Try to mention your outcome variables in your objective as well.
- You can write more than one objective of the study but it should be clear and concise
- Use action verbs while writing your objective like
 - ❖ Investigate/ Analyze/ Explore/ Examine/ Evaluate/ Assess/ Identify/ Measure/ Determine/Compare
 - ❖ Investigate the effect of iron supplementation on anemia in pregnant women
 - ❖ Compare the effectiveness of two different antihypertensive treatments in reducing systolic blood pressure.
 - ❖ To determine the effectiveness of a new diagnostic tool for identifying early-stage colorectal cancer.
 - ❖ Evaluate the impact of dietary changes on blood glucose levels in Type 2 diabetes patients by analyzing their HbA1c levels before and after intervention.

Operational Definitions (Conceptual definition: what it means):

An operational definition clearly explains how a variable is measured (The specific scale, test, tool) or identified in a study, so that it is objective, reproducible, and unambiguous. A good operational definition removes ambiguity by detailing the tool, scale, procedure, and criteria used.

- Make sure if possible give references for the operational definition of your outcome variable:
 - **Exmample-1:** Pain severity will be measured using a Numeric Rating Scale (NRS) from 0–10, where 0 = no pain and 10 = worst imaginable pain, recorded at 24 hours post-procedure
 - **Exmample-2:** Patient satisfaction will be assessed using the Iowa Satisfaction with Anesthesia Scale (ISAS) at 24 hours post-procedure. A higher score indicates greater satisfaction.
 - **Example-3:**
 - Hypertension is defined as a systolic blood pressure \geq 140 mmHg or diastolic blood pressure \geq 90 mmHg, as measured on two separate occasions using a calibrated mercury sphygmomanometer after 5 minutes of rest, in a clinical setting.
 - Blood pressure will be measured at baseline, and 6-month follow-up for all participants.
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MATERIALS & METHODS:

Study design:

Select an appropriate study design as per objective of your study. Like

- Randomized Control trial (**Note:** You need to get your trial register with any trial registry)
- Comparative study
- Experimental study
- Quasi Experimental study
- Descriptive/Observational study including Cross-sectional study

Study sample:

- Specify how you will select participants from the study population.
- Describe the sampling method (random, stratified, convenience) and the sample size.
- Mention any inclusion and exclusion criteria that will be applied to determine eligibility.

Study sampling technique:

Including both recruitment of study subjects and subsequent allocation to groups. Choose appropriate sampling technique in line with the objective of your study. (Probability or non-probability type)

Study setting:

Write the details where you will conduct the study. Specify Department with institute name.

Study population:

The study population refers to the entire group of individuals that meet specific characteristics relevant to the study. It is the broad group from which the study sample will be selected.

- Define the larger group from which the sample will be drawn.
- Include demographics, health conditions, or characteristics that define this group.

Study duration:

Write the duration in which you will complete your study. for example, 2, 4, or 6 months etc.

Sample Selection

Base on your study population/ study sample write charactersitics which full fills your study sample charactersitics. It will include demographics as well as clinical and disease related charactersitics

Inclusion Criteria:

- Define characteristics that participants must have to be eligible for the study.
- Be specific about age, health status, disease stage, demographics, or other relevant factors.
- Ensure criteria are measurable and relevant to the study objectives

Exclusion Criteria:

- Identify factors that disqualify potential participants to avoid confounding variables or ethical issues.
- Focus on conditions, comorbidities, or medications that may affect the study outcome or pose risks.
- Ensure exclusion criteria are clinically relevant and manageable.

Study Sample Size:

Use appropriate formula and outcome variable to calculate your sample size. Write proper statement and give formula which you have used for sample size calculation. Mention appropriate statistics from literature in line with the objective of your study. Give reference for the statistics you have taken from the literature.

METHODOLOGY (Data Collection procedure)

Purpose: Describe how the research will be conducted, including study design, procedures, and data collection methods.

Include:

- Study design (e.g., RCT, observational)
- Population/sample (size, selection criteria)
- Data collection methods (e.g., surveys, lab tests, interviews)
- Tools (e.g., questionnaires, instruments used for measurement)

Example: This study will use a randomized controlled trial (RCT) design, with a sample of 200 patients aged 30-65, diagnosed with Type 2 diabetes.

Ethical declaration

Purpose: Confirm that the study will follow ethical guidelines to protect participants' rights and welfare.

Include:

- Informed consent process
- Ethical approval from a recognized ethics committee or review board
- Confidentiality and data protection measures

Example: The study will adhere to ethical guidelines, with informed consent obtained from all participants. Approval will be sought from the Institutional Ethics Review Board.

Data Analysis:

Purpose: Outline how the collected data will be processed and analyzed to answer the research questions.

Include:

- Mention Software name with version used for data entry and analysis (e.g., SPSS, R)
- Mention the type of variables in the study (Quantitative & Qualitative variables)
- Statistical tests in line with the objective of the study
- Mention of handling missing data and outliers
- Mention criteria for level of significances

Example: "Data will be analyzed using SPSS software. Descriptive statistics will summarize demographics, and t-tests will compare BP changes between intervention and control groups."

References

- Cite latest reference, preferably those published in last five years.
- Use a consistent referencing style (e.g., APA, Harvard, Vancouver) throughout the proposal.
- When referring to a source in the text, use the correct in-text citation format (e.g., APA, Harvard, Vancouver)
- Arrange references numerically in the order they appear in the text, or alphabetically by author as per references style (e.g., APA, Harvard, Vancouver)