

Hints to Prepare a Research Proposal

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Research in simple definition is not more than a process of asking questions and answering them by survey or experiment in an organized way (Lumley and Benjamin 1994). The initial step in designing a study is to write the research proposal which is a written document of the concept, programme and expenses of the research work. The proposal serves as a basis of discussion within other experts directly or peripherally involved with the work such as academic supervisors, granters and administrators (Lumley and Benjamin 1994).

· **Title:** It should be accurate and informative and free of abbreviations or jargons. It should contain the key words relevant to the proposal objectives (specific enough to tell the reader what exactly the study is about). Up to 8- 10 words are suitable, but a longer subtitle may be needed for more precise definition of the study field (if it is felt that title is not too informative), (Lumley and Benjamin 1994).

· **Background:** Writing a good study background depends on the preliminary readings on the topic and indicates the researcher's full understanding and knowledge of the previous works in the study field. It is a sales document, designed to convince the reader that the proposed work should be considered for endorsement and support. The background of proposal or its rationale should include a clear definition and statement of the research problem, why the problem is selected and background of events that necessitates performance of the study. Up to 800 words and 6-8 references may be enough for a satisfactory proposal background. Writing incorrect or too broad information or too lengthy reviews results in that the reader can not find out the main message of the work and then less convinced with its rationale (Beaglehole *et al.* 1993).

· **Objectives:** The objective of a certain research summarizes what to be achieved by the study. It should clearly define the question for which a solution is being sought. The proposal's writer should consider the following points on stating his research objectives so as:

- To be clearly related to the statement of the problem.
- To cover the different aspects of the problem.
- To be clearly phrased in operational terms specifying exactly what you are going to do, where and for what purpose.
- To be realistic considering local conditions and available resources.
- To use specific action verbs such as "to determine, to identify, to verify, to describe, to calculate".
- To avoid vague non-action verbs such as 'to study', 'to appreciate', 'to understand.'

The research objectives are classified into two types, general and specific.

i. *General objectives:* these will define what is expected to be achieved by the study in general terms. For example, if the research problem chosen is "domestic violence against

women in the Area X ", the general objective could be "to identify the reasons for domestic violence against women in the Area X so as to suggest optimum solutions" (Ahmed and Elmardi 2005).

ii. *Specific objectives:* Here the general objective is broken down into smaller and logically connected units to address the various aspects of the problem and the key factors that are assumed to cause or influence the problem. The specific objectives of a research work should focus on the following points:

- a. To identify the distribution and patterns of a problem.
- b. To examine the possible factors that may influence the problem.
- c. To indicate how the research results will be used.

Returning to our example on domestic violence, the specific objectives for a research work in this problem could be set as follows (Ahmed and Elmardi 2005):

- i. To determine the prevalence of domestic violence against women in the Area X.
- ii. To identify the demographic characteristics of the abused women and the abusers.
- iii. To identify the patterns of the violent episodes against the women in the Area X.
- iv. To identify the immediate causes of violent episodes against the women in Area X.
- v. To identify the socioeconomic and cultural factors that may influence domestic violence against women in the Area X.
- vi. To make recommendations to help the violence victims to all parties concerned such as family members, non-governmental organizations, health staff and governmental departments such as social care and police.

In addition to objectives, a hypothesis can be formulated in some studies (Beaglehole *et al.* 1993). A hypothesis is a suggested or assumed explanation for the research problem that can be tested. It is a prediction for a relationship between one or more factor and the problem under study. In our example above about domestic violence we can formulate and test the following hypothesis (Beaglehole *et al.* 1993):

- i. Domestic violence is common in families of poor socioeconomic status due to their financial deficits.
- ii. Pregnant ladies are more vulnerable to domestic violence due to hormonal changes.
- iii. Unemployed or alcoholic husbands are more likely to be abusers.

· **Methodology:** The methodology of a research proposal documents how and when the research will be conducted and how best to evaluate the results. It is the most detailed part of the proposal and includes type of the study, criteria of selection of subjects (exclusion and inclusion criteria), calculation of the sample size (number of the subjects should be key to the minimum necessary for valid results), methods of data collection, measurement, analysis and presentation, ethical considerations and if a pretest or pilot study is needed. The proposed techniques should include operative details, frequency of dosage or administration of drugs, chemicals, radiopharmaceuticals or anesthetics. When animal studies are planned, consider the species, number, availability and costs of the animals and the concerned ethical considerations. The rationale of considering ethical issues in scientific research is that most of the research works on human subjects, entail some risks to the participations (Royal College Guidelines 1984). An ethical research design is that which respect the autonomy of the subjects and cause no harm (non-maleficence) or minimal harm and maximal benefit (beneficence), (Royal College Guidelines 1984). These principles can be translated in research practice in measures such as obtaining informed consents, approval of the national and institutional ethical committees, and declaration of conflicts of interest (usually arise when a commercial or other sponsor may wish to use the study results to promote a certain product or service), (Royal College Guidelines 1984).

· **Organization:** The researcher has to set clearly the organizational issues of his research work. The researcher should not only name the place of his study but also the available facilities including technical and secretarial help and approval of the place administrators. It is

important to set a time when the study is to commence, how long to last and whether it will be in stages (and if so, the time schedule for each part). The researcher should include a list of the names of all the collaborators in his work with their positions, consents and curriculum vitae.

• **Budget:** The budget of a research work is essentially a document of its expenses. The research is required to outline the capital and running costs together with the hidden costs such as the use of already existing laboratories, libraries and computer facilities, technical and secretarial help, in addition to the costs of travel of researchers and subjects. A portion of the proposed budget should be reserved for the unforeseen costs. A fully itemized budget is necessary as granting bodies require a detailed breakdown of the costs of the projects. The golden rule is not to ask for too much or too little. It is wise to find out in advance the likely figure a particular granting authority will allow for a work of the type proposed (which provides a ceiling for the budget).

A narrative portion of the budget is used to explain any unusual items in the budget (if the costs are straight forward, no explanation is needed). If the narrative is needed it can be structured in two ways.

- i. To create "notes to the budget" with footnote-style numbers on the line items in the budget keyed to the numbered explanations.
- ii. Or, if extensive or more general explanation is required, the budget narrative can be structured as straight text.

• **References:** A numbered list of recent references matching those cited in the text is needed (optimum number: 6-8). The Vancouver style is preferred in biomedical research.

References

1. **Lumley J, Benjamin W. (1994).** Research: some ground rules. Oxford University Press, p 7.
2. **Beaglehole R, Bonita R, Kellstrom T. (1993).** Basic epidemiology. WHO, Geneva, 1993. p 46.
3. **Ahmed AM, Elmardi AE. (2005).** A study on domestic violence among women attending a medical centre in the Sudan. East Medit Hlth J; 11: 164-74.
4. **Royal College Guidelines. (1984).** Royal College of Physicians of London Guidelines of the Practice of Ethics Committees in Medical Research, RCP London. p 67.