

Student Corner

How to Conduct a Scientific Research?

Dr.Elsadig Yousif Mohamed

Enabling Researchers to carry out scientific research is of paramount importance. In this issue below is some tips that expected to improve the skill of conducting scientific research

Definition

Research is: “The systematic collection, analysis and interpretation of data to answer a cretin question or solve a problem”

Purposes of Research

Research serves to:

1. Generate new knowledge and technologies to deal with major health problems “Basic research “
2. Identify priority problems, evaluates polices and programs “Applied research”

The importance of Research

Why do we carry out research?

It is generally recognized that there is a wide gap between data available, and data needed for management, planning and decision making; so research is needed to bridge this gap

Characteristics of research

The characteristics of research are the following:

- It demands a clear statement of the problem
- It requires a plan
- It builds on existing data
- It collects new data

Classification of health research

Health research can be classified as:

1. Biomedical research
2. Clinical research
3. Epidemiological research

4. Health system research

1. *Bio-medical research:-*

Bio-medicinal research focuses on the individual. It concentrates on how the body works (Biological process), body structure and functions, and the pathological mechanisms occurring within the body.

Example:

The effect of antituberculous drugs on the different body organs

2. *Clinical research*

Clinical research is interested in the individual. It focuses on the response of the body to various preventive, diagnostic and therapeutic interventions

Example:

The effect of long acting penicillin on asthmatic patients

3. *Epidemiological research:*

Epidemiological research focuses on the population, and considers the frequency, distribution and determinants of diseases

Example:

- a. *Epidemiology of malaria in Khartoum state*
- b. *Pattern of health problems in under- five children in Omdurman area.*

4. *Health system research (H.S.R):*

Health system research focuses on the organized response to health and disease. It considers how well is the health system functioning, such as cost and quality of health services.

Health system research aims at providing information which improves the health system performance.

Types of Health system research

a. *Operational research*

b. *Health policy research*

a. *Operational research*

It is the process of identifying and solving health programme problems. It is designed to improve effectiveness and quality of health services delivered by health providers, and the availability, accessibility and acceptability of health services delivered.

Example:

- Acceptability of AIDS patients to VCT services
- Assessment of referral system in Khartoum state

b. *Health policy research:*

Health policy research aims at making policy for health. For example, if Ministry of Health would like to allocate budget for the states, how could that be done? Is it according to population size, or disease load, or mortality rates etc...? So health policy research may be needed to allocate such budget.

Characteristics of Health system research:

- a. Health system research should focus on priority health problems
- b. Should be action-oriented and aims at developing solutions. The outcome of most health system research should be simple practical advice.
- c. H.S.R should utilize an integrated, multi – disciplinary approach. For example doctors, nurses, epidemiologists, nutritionists etc. can participate in such research
- d. H.S.R should be participatory. Stakeholders concerned such as policy-makers, managers, care providers, community leaders, researchers etc should participate in the study.
- e. H.S.R should be timely (At the right time relevant to the issues under investigation)
- f. Research designs should be simple.

g. H.S.R focuses on finding achievable solutions for the health problems

h. H.S.R results should be simple and easy to understand

i. H.S.R should be evaluated by how much it influences policies, improves services and leads to a better health.

Problem identification

How to identify a research topic?

A problem is “A discrepancy between the existing and the expected situations “.

A well defined problem leads to a good statement of the problem, clear hypothesis, clear definitions of variables and helps the selection of the appropriate research design.

Criteria of a research topic

The research topic has the following Criteria:

1. Perceived discrepancy between what should be and what is existing
2. A question about why this discrepancy exists.
3. More than one answer to the Question is expected.

Criteria for prioritizing problems for research

Each problem that is proposed for research has to be judged according to certain guidelines:-

1. Relevance
2. Avoidance of duplication
3. Feasibility
4. Political acceptability
5. Applicability of possible results and recommendations
6. Urgency for results
7. Ethical acceptability

Relevance

The topic you choose should be a priority problem. For example, how wide spread is the problem? How severe is the problem? Is the problem affecting an

important group such as children or pregnant women?.

Avoidance of duplication

Before you decide to conduct a research, you should find out whether the suggested topic was investigated before in this area or another area with similar conditions. If the topic has been investigated the results should be reviewed to explore whether major questions need further investigations, if not this topic is not suitable for research and should be discarded.

Feasibility

This should be thought of in terms of resources (human, budget, materials and time). If the resources are not available or not enough, the topic will not be suitable for research

Political acceptability

The ultimate goal of a research is to provide decision-makers and managers with results, so it is advisable to choose a topic that has the interest and support of the authorities. This will increase the chance for recommendations to be implemented. If policy makers are not interested, you should exert efforts to solve the problem such as to involve them at an early stage.

Applicability of possible results and recommendations

A research should be applicable so as to be implemented. The possibility of implementing research recommendations depends on the following:-

- a. The acceptability of the authorities
- b. Resources availability
- c. Opinion of the potential clients
- d. The opinion of the responsible staff

Urgency of results needed

According to the urgency needed for data , the researcher should decide what research to be done first and which can be done later .

Ethical acceptability

Ethical issues should be considered when we are trying to conduct a research, because we may do harm on others when we are carrying out research. This issue is obvious especially in experimental studies.

Acceptance of research by the study subjects is crucial and taking consents from them is always important.

Scales for rating a research topic

If a researcher has more than one topic, and wants to select one of them, rating can be done.

The researcher should be critical when doing rating and the topic to be selected is that which scores the higher marks.

Note

If the topic is duplicated or not relevant it should be discarded without going on rating.

Problem statement

When the topic has been selected for research, the researcher needs to describe the problem in a concise and clear manner.

Problem statement should include information such as:

1. Background: Background about the topic such as health status and health care in the community etc. should be considered, including statistics relevant to the topic of the study.
2. Basic description of the research problem.
3. Rationale: Reasons why the problem is important and needs to be investigated should be stated.
4. Adscription of important geographical, cultural, religious or economic factors in the community that affect the problem should be written whenever relevant.

5. A brief description of earlier studies on the problem is important.

Table-1: Criteria for prioritizing research problems for investigation:

Item	score		
	1	2	3
Relevance	Not relevant	Relevant	Very relevant
Avoidance of duplication	No information available	Some information available	Sufficient information available
Feasibility	Not feasible	Feasible	Very feasible
Political acceptability	not accepted	More or less accepted	Accepted
Applicability	No chance for implementation of recommendations	Some chance is available	Good chance is available
Urgency	information not needed now	Some delay is o.k.	in formation urgently needed
Ethical acceptability	Major ethical problems	Minor ethical problems	No ethical problems

Web sites

Below are useful web sites for researchers

1. Council on Health Research for Development (COHRED) [http\www.cohred.org](http://www.cohred.org).
2. Global Forum for Health Research [http\www.globalforumhealth.org](http://www.globalforumhealth.org)
3. Tropical Disease Research (TDR) [http\www.who.int/tdr](http://www.who.int/tdr), or www.emro.who.int/tdr

Student Research

Assessment of Knowledge, Attitudes and Practice of Mothers towards Under Two Years of Age Child Feeding, 2002-2003

Maria Widaa Allah Ismail*
Ahfad University for Women

Background: The knowledge, attitude and practice of mothers, with regard to child nutrition, are considered as important elements before establishing any programme aiming to improve mother and child health. This study aims to assess mothers' knowledge attitudes and practice regarding breast-feeding, child feeding and feeding during child illness, and factors affecting it.

Methods: The study was descriptive, cross-sectional, and facility-based carried out in Ahfad University Centre. Sample size was 100 mothers having a child under two years of age. Data was collected using a structured questionnaire and analyzed manually.

Results: 45% of the mothers have primary education, 86% were house wives and the family income was moderate in 74% of them. 66% of mothers surveyed started breast feeding immediately after delivery and

85% started supplementary feeding at the age of 4-6 months. Concerning breast feeding during illness the study showed that 97% of the respondents were breast fed during the illness with extra amount and duration in 46% of them.

It was shown that children under study were not given eggs, meat, fish and milk, and vegetables (26%, 19.5 %, 19% and 17.1%) respectively, the reasons being it may delay speech (39%) and cause hypo-pigmentation of the skin (53%). The study showed that 74% of the mothers had good knowledge about child nutrition the source of which was from relatives in 30% of them.

Conclusion: The study concluded that health education should be strengthened during antenatal period as well as after child birth

* **Supervised by Dr. Sawsan Mustafa Abd Allah MD**