# Topic 1 ▶ Introduction to Project Paper

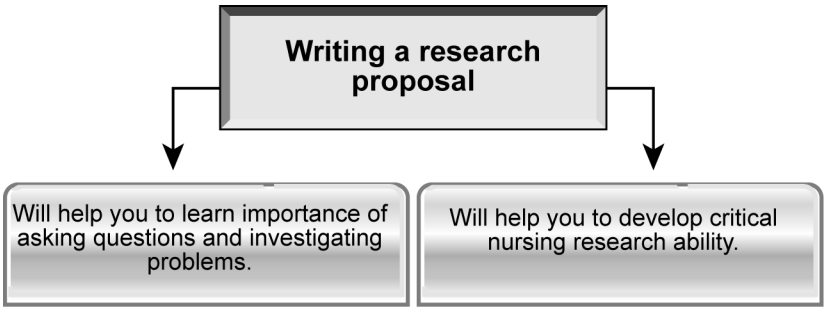
**LEARNING OUTCOMES**

By the end of this topic, you should be able to:

1. identify the steps in conducting research, and
2. revise and refine your Research Proposal.

## ▶ INTRODUCTION

Welcome to the process of conducting nursing research. Your involvement in conducting nursing research makes you aware of the problems and issues related to nursing practice, education and administration. Although you will be engaged in a small area of research, yet interacting with colleagues on their research and with your tutor-supervisor will help you to develop the ability of conducting critical nursing research in relation to improving nursing practice. You will also learn the importance of asking questions and investigating problems at the end of this first experience of conducting a small research project. With the help of your tutor-supervisor during the study of Nursing Research and Statistics, you have developed a research proposal earlier. In this topic you need to refine your proposal with guidance from a tutor-supervisor and then follow the revised proposal during the course of your research. This is the final research proposal to be followed during the course of research.




# NURSING RESEARCH PROCESS

Previously you have learned the steps that need to be taken before the commencement of research. You should make sure that the final research proposal is completed after Tutorial 1 (week ). Let us revise the different steps in conducting research by looking at a flow chart given in Figure 1.1.

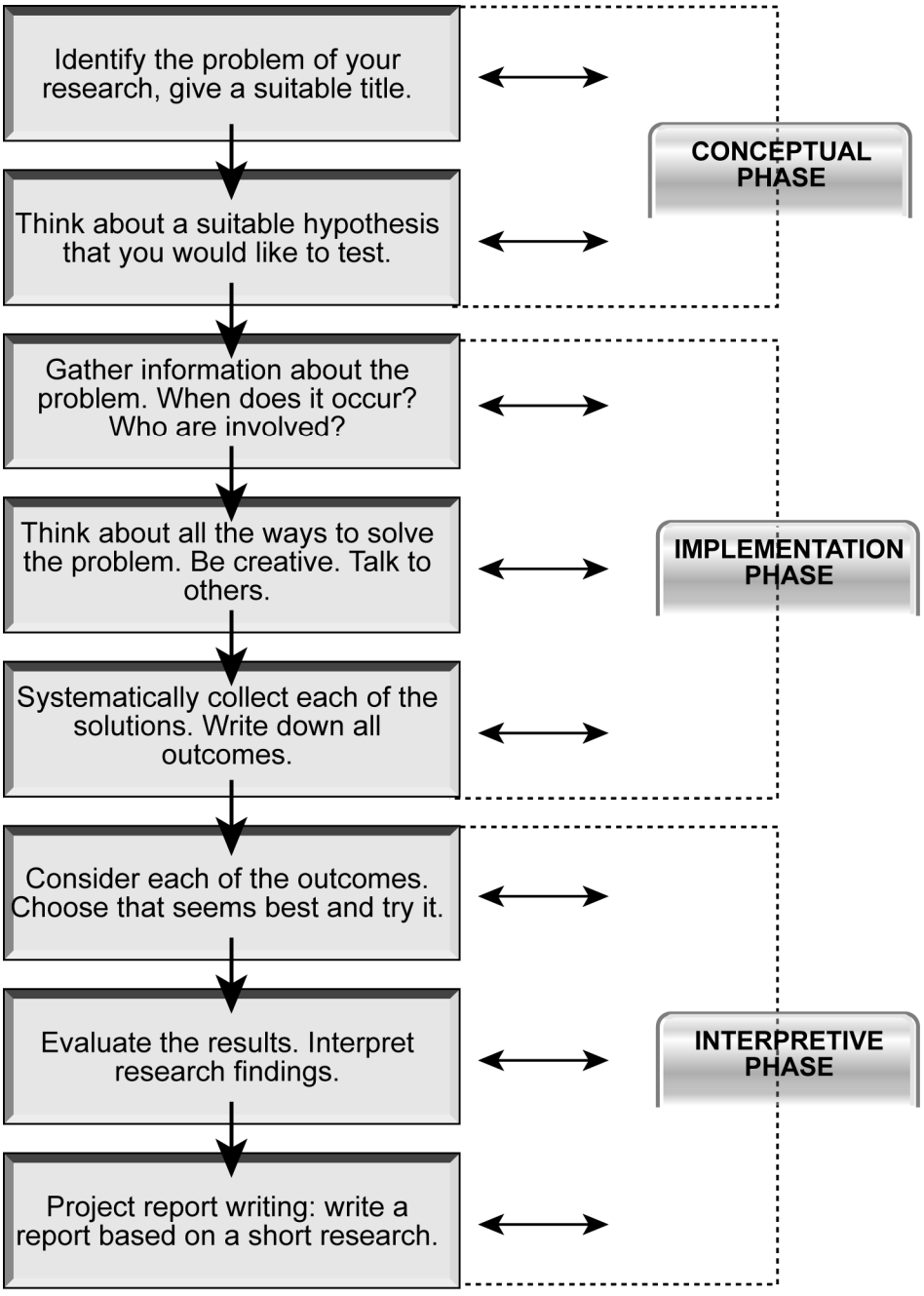



**Figure 1.1**: FLOW CHART showing different steps in research

Alternatively, the above flow chart (Figure 1.1) can be presented differently in a diagram (Figure 1.2) showing three phases- ***conceptual, implementation and interpretive***. In the **conceptual phase**, the problem/s are identified and later hypothesis/hypotheses are presented. In the empirical phase, the researcher is engaged in designing the research programme, decides the population that shall be used to derive samples for research and determines the specific types of quantitative or qualitative research. **Validity** of the experiment is also important to a researcher as the inference obtained from the research should be repeatedly seen if the experiment is repeated. Collection of data from an experiment or survey or interview must be error free. That is why sometimes experiments are replicated, especially for quantitative experiments. In the **interpretive phase**, you think about the results obtained to discuss these and conclude, and finally write the project paper.

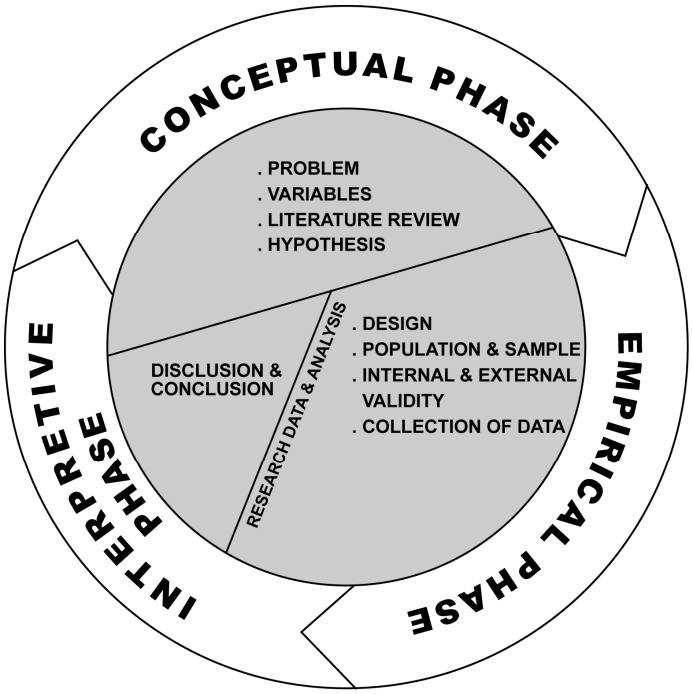



**Figure 1.2**: Different phases of research in a project

# RESEARCH DESIGN

During the beginning of a research you need to develop a simple research design reflecting the overall plan of a research that answers research questions. Research design can be ***quantitative*** **or** ***qualitative***.

A **quantitative research design** typically involves the following aspects of study:

- Will **there be an intervention?** When nurses conduct a research with the objective of a specific intervention (e.g. promoting breast self examination or the time of cutting the umbilical cord of the newborn and disinfection of the area of the cut), it becomes an experimental research. On the other hand, if a nurse researcher conducts a research to obtain data about a phenomena that already exists, it is termed as non-experimental research. For example, a nurse might like to do a research to compare the experiences of oral cancer patients, who have undergone a surgery to remove a part of the maxilla. Research design here guides the specific nature of the experiment.
- **What types of comparisons should be made?** Researchers often plan comparisons within their research design. For example, how many days patients with or without high blood sugar level remain in the obstetric wards before delivering their baby.
- **What procedures are used to control variables not related to research question?** The complexity of relationship among variables sometimes makes it difficult for a researcher to test hypotheses. For example, body weight of children is dependent on their age but there is another variable, food consumption, is a related factor to body growth. Therefore to obtain the regression of body weight on age, the extraneous variable, food consumption should be controlled by using proper statistical methods such as covariance between body weight and food consumption.
- **When and how many times data will be collected?** In some studies data is collected at one point, i.e. one collection, but in other studies data may be collected at multiple points (several times). A researcher has to determine whether multiple contacts or a single time contact is necessary to collect data from the patients. For example, whether some specific data should be collected 1 day after surgery or 3-7 consecutive days after surgery.
- **Should the data be randomly collected?** Certainly through randomization or random assignment, every participant has an equal chance of being included in a group. Randomly assigned groups for comparison are used for biological, psychological and social traits.
- **In what setting will the study take place?** Some data for nursing research are collected from ward or clinics or patients' homes or interviewing relatives of patients. Data also can be collected from laboratories dealing with specimens from the patients or from patients staying in highly controlled environmental laboratories.
- **Are sampling plan, data collection plan and data analysis plan also needed to be inserted in the research design?** Yes, it should be because a holistic planning for a research design makes research work easy for an experimenter.

A **qualitative research design** is planned, but not completely planned as the researcher may like to include during the course of the experiment, some additional information based on the realities of the experiment that was not understood at the onset of the experiment. Therefore, the qualitative design is also referred as emergent design. Phenomenology research is one example of qualitative research where the main data source is in-depth conversation between the researcher and participants/informants. For example, post-partum depression scale in new mothers or parental behaviour towards their children affected by dyslexia or autism can be studied through phenomenological research. See the Nursing Research and Statistics module for further examples of qualitative research.

Characteristics of a qualitative design are:

- It is flexible and can be adjusted according to the future direction of the programme.
- It is holistic kind of research, merging various types of data collection strategies.
- Requires the researcher to constantly engage in finding out new strategies for research.

**ACTIVITY 1.1**

1. Read the chapter on Research Design in '**Essentials of Nursing Research**' by Polit et al. (2001), and compare the dimensions of quantitative research designs and qualitative research designs.

2. Read the research proposal on **Training Needs Analysis of Registered Nurses** (Page 136 – 150 in the Topic 4 of Nursing Research and Statistics), and give your comments on the proposal.

Titles of some important research journals in nursing:

You may want to go to the digital library of Open University Malaysia or other local Universities in Klang Valley, where you may find some of the following journals. Some articles from these journals are of your interest.

1. American Journal of Nursing.
2. Nursing Research.
3. Research in Nursing and Health.
4. Western Journal of Nursing Research.
5. Applied Nursing Research.
6. Clinical Nursing Research.
7. Qualitative Nursing Research.
8. Biological Research for Nursing.
9. Final Year Project dissertations of Bachelor of Nursing students are available in the Department of Nursing Library at the University of Malaya and at the library of the Medical Faculty, Universiti Kebangsaan Malaysia.

# Topic 2 ► Discussion Sessions with Tutor-Supervisor and Project Practicum

**LEARNING OUTCOMES**

By the end of this topic, you should be able to:

1. carry out research, and collect data,
2. analyse and interpret data, and
3. produce a first draft project report.

## ► INTRODUCTION

Before week three (3) of the semester, you communicate with the tutor supervisor assigned to you. With her help, you get your proposal developed in the last semester amended and ready. Submit the refined proposal to tutor-supervisor at week 3. Before that, you may also commence the preliminary phase of research such as your plan for methodology of research.

By **week 3**, you will submit the revised research project plan to the tutor supervisor . Hence, the conceptual phase of the research has been completed and between week 3 to week 5 you have also started your experiment and gathered some results.

During **the semester**, you discuss with your tutor-supervisor the progress of your on-going project. Bring your results that are already collected with you when you meet your tutor-supervisor every time during the discussion. Tutor-supervisor will give you feedback on your progress and suggest alternative ways to improve your research process, interpretation of your results and writing of the report. Make sure that you attend all the discussion sessions with your tutor-supervisor. By week 9, you should have completed your research and a draft copy of your research report.

Timeline for the progress of research is very important. Therefore, you have to develop the following table showing expected progress of the project that needs to be completed before every meeting with your supervisor. At the end of each meeting/discussion, get comments and signature from your tutor-supervisor

**Table 2.1:** Progress Report of Students' During Research

| **Name of student:**<br>**Title of the Research Project:** | | | | |
|---|---|---|---|---|
| **Date of meeting with tutor-supervisor** | **Week 3**<br>**Date:** | **Week 5**<br>**Date:** | **Week 7**<br>**Date:** | **Week 9**<br>**Date:** |
| Progress Report | The final research proposal is completed with following suggestions from Tutor-supervisor. | The following critical progress is made:<br>Research Problem:<br>Objectives:<br>Literature review:<br>Research Methodology:<br><br>Research Findings:<br>_____ | The following progress is made:<br>Research findings:<br>Research Findings:<br>Research Findings:<br>Data Analysis | The following progress is made:<br>Discussion of Findings:<br>Summary and Conclusion:<br>Recommendation from the Findings:<br>Writing of Report Completed<br>Presentation of report to Tutor-supervisor. |
| Comments and signature of Tutor-supervisor | Satisfactory/ unsatisfactory.<br><br>Comments<br><br><br>Signature<br><br>Date: | Satisfactory/ unsatisfactory.<br><br>Comments<br><br><br>Signature<br><br>Date: | Satisfactory/ unsatisfactory.<br><br>Comments<br><br><br>Signature<br><br>Date: | Satisfactory/ unsatisfactory.<br><br>Comments<br><br><br>Signature<br><br>Date: |
| Comment and signature of Supervisor-preceptor. | The student has completed the research project and at every stage I had inspected the students' progress and found that all processes involved in the project have been carefully and independently conducted by the student.<br>Signature:<br>Date: | | | |

## CHECK WITH TUTOR-SUPERVISOR

(Please bear in mind that you have about 8 weeks for research and report writing. Therefore, frame some simple research questions to obtain the answers to the questions in a short period. Don't be too ambitious in a Honours Research Project)

1. Check whether the final research question framed by you is correct or not.
   **Example of a research question from a quantitative study:** Are there any differences in the stress and social support level between two groups of patients- healthy and asthmatic?
   **Example of a research question from a qualitative study:** What are the anxiety level, fear and concerns of women of different age groups that had hysterectomy?

2. Is your research design adequate enough to obtain the answer to the research Question? This includes sample size, randomization, methods of data collection, surveying techniques, evaluation of a practice/treatment/policy works etc. or effectiveness of outcome research in nursing and health care fields.

3. During every meeting with supervisor, show and explain your progress to the Tutor- supervisor and obtain her comments. Attend to their comments at the end of a tutorial and show to her your improved version of results/analysis of data/report writing. Check with tutor-supervisor the interpretation of results.

4. Get the signature of tutor-supervisor during each meeting.

# Topic 3 ▶ Submission of Research Paper

**LEARNING OUTCOMES**

By the end of this topic, you should be able to:

1. complete a project report during 5th tutorial or within a week after the 5th tutorial.

## 3.1 Format for Writing Research Report:

Do you know what research report writing is? It is a skill that is developed through practice. Normally a researcher does research, collect the data, analyze the data, and prepare a report on the outcome of research. The report consists of the following elements, illustrated in the flow chart below.

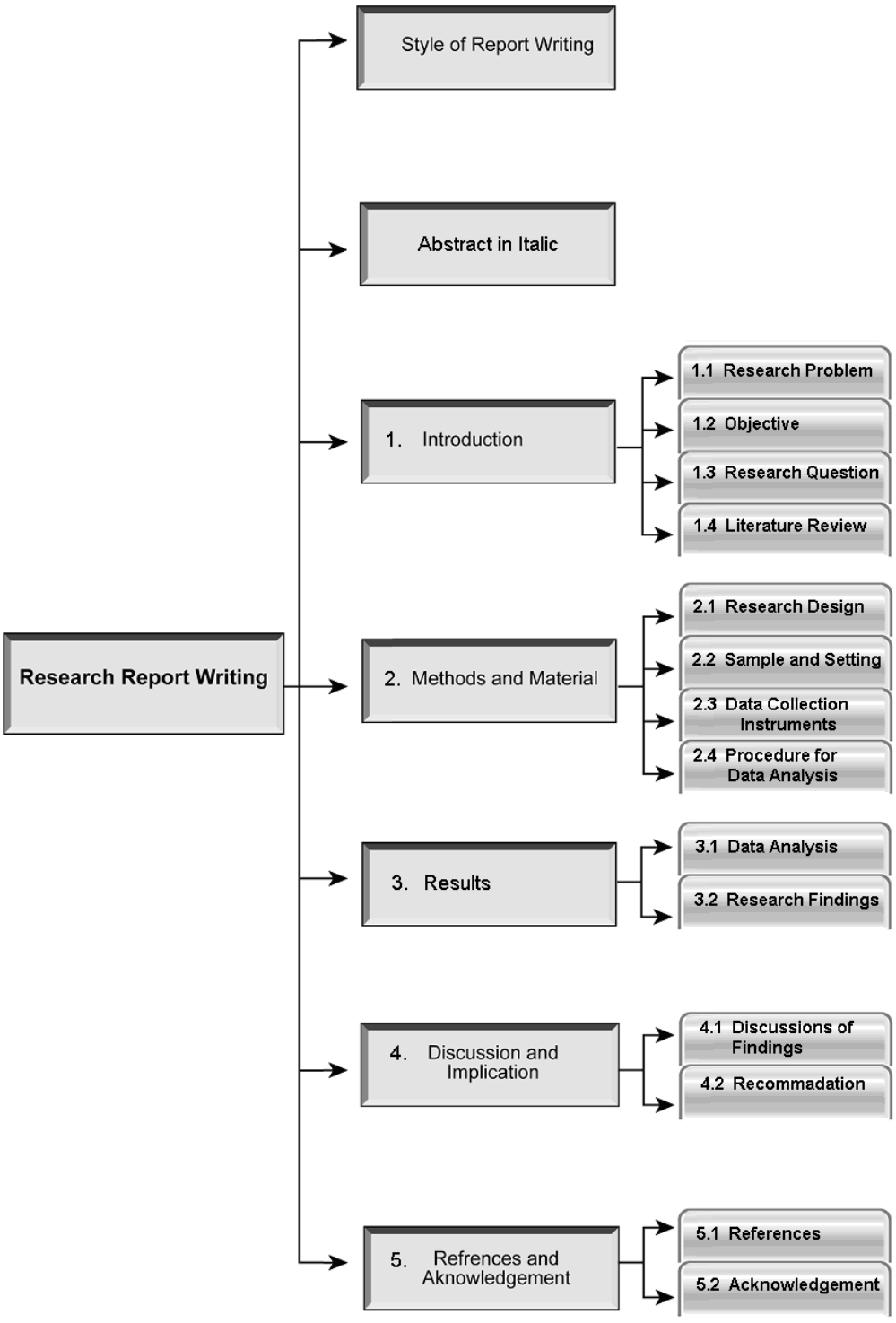



**Figure 3.1**: Steps in the presentation of a research report

Guideline for writing a research report:

**Below is the guideline.**

**(a) Writing Style:**

- For research report writing, use Times New Roman with font size 12.
- Report should be written in double spaced, not more than 50 pages.
- Report should be bound with soft or hard cover.
- A research report is always written in past tense. For example, 'the student nurses in the university hospital were taught by the senior sisters or matron'.
- An abstract at the beginning of the report should stand on its own, and usually expressed in Italics.
- Focus on summarising results. Your summary should reflect the main results of your research.
- Correct spelling, clarity of sentences and phrases, and proper reporting of quantities (proper units, significant figures) are just as important in an abstract as they are anywhere else.

**(b) Abstract**

At the beginning of your report, you should present an abstract. This conveys to the readers a brief summary of the research and research results for them to understand in a minute the rationale behind the study, some important results, conclusions and new query related to the research.

An abstract is a concise single paragraph summary of completed work or work in progress. In a minute or less a reader can learn the rationale behind the study, general approach to the problem, pertinent results, and important conclusions or new questions.

Examples of abstracts

**Example 1:**

**Current issues in home ventilation programme, the UMMC experience (Author: Nurhayati Mohd.Nor, UMMC)**

*Mechanical ventilation may be defined as a life support system designed to replace or support normal lung function. It can be in the form of invasive or non-invasive mechanical ventilation. In Malaysia there is a shift from hospital to home care for the mechanically ventilated adult and children. This project paper will discuss some of the practical issues that need to be considered before discharging patient with mechanical ventilation.*

**Example 2:**

**Preventing smoking relapse in postpartum women (Joy L. Johnson et al.- from Nursing Research Journal).**

*This study aimed to prevent smoking relapse in the postpartum period by comparing the rates of continuous smoking abstinence, daily smoking, and smoking cessation self efficacy in treatment and control groups. While providing face to face counseling session to 254 participating women for a period of 6 months after delivery, the 6-month continuous smoking abstinence rate was found to be 38% in the treatment group and 27% in the control group. Daily smoking rate was found to be more in the control group (48%) than the treatment group (34%). Smoking cessation self-efficacy did not vary significantly between two groups. Thus it may be concluded that the intervention by nurses did not achieve complete cessation of smoking but could be reduced slightly in the group that was intervened.*

### (c) Introduction

Your introduction should not exceed 5 pages (double spaced, typed). It should comprise of the importance of study and why is it worth doing?
In the introduction, you should inform the readers the general intention behind the project and background study that has been done by other past researchers i.e. a concise literature review. Approaches vary widely. However, for your nursing research project; the following approach can produce an effective introduction.

- Describe the importance (significance) of the study - why was this worth doing in the first place? Provide a broad context.
- Defend the model – for example, why did you use this particular group of patients for a study of their behavioral response to a particular treatment? What are its advantages? You might comment on its suitability from a theoretical point of view as well as indicate practical reasons for using it.
- Provide a rationale. State your specific hypothesis/es, or objective(s), and describe the reasoning that led you to select them.
- Very briefly describe the experimental design and how it accomplished the stated objectives.

### (d) Literature Review

Make a concise literature review of papers that are very relevant to your research. You should know how to critically review literature. Compare the different authors' view on a particular point and state which is more appropriate especially in relation to your study. Don't simply put one reference after another. For the nursing research report, literature review should not contain more than 10 pages.

### (e) Materials and Methods

Material and Methods provide a sufficiently detailed description of the research design, sample size, clinical procedures in the ward or laboratory methods. People will want to read this material selectively. Materials and methods may be reported under separate subheadings within this section or can be incorporated together. Total number of pages for material and methods for your project should not exceed 15 pages. For those students who have planned the experiment/s

wisely, this should be the easiest section to write, but many students misunderstand the purpose. The objective is to document all specialized materials and general procedures, so that another individual may use some or all of the methods in another study or judge the scientific merit of your work. Photographs of the ward, patients and special instruments can be inserted. If this is a qualitative study, list all the questionnaires, preferably in the appendix, with proper notes attached to the questionnaires. Frequency and duration of the interview, if any, may be recorded using a video-tape.

Writing materials and methods section

**Materials:**

- Describe materials separately only if the study is so complicated that it saves space this way.
- Include human subjects (patients and their relatives), biological materials, and any equipment or supplies that are not commonly found in an ordinary hospital ward.
- Do not include commonly found supplies such as thermometer, stethoscope, weighing machine etc., or standard hospital equipment such as refrigerator, ovens, etc.
- If use of a specific type of equipment such as respirator, ventilator, stress ECG etc, has been made to the success of the experiment, then it and the source should be singled out, otherwise no.
- Materials may be reported in a separate paragraph or else they may be identified along with your procedures.
- In nursing research one frequently works with human subjects, hence list the names of the subjects, if they do not have any objection.

**Methods:**

- Describe the methodology completely, including such specifics as recording of temperatures, time of medication etc.
- To be concise, present methods under headings devoted to specific procedures or groups of procedures
- Generalise - report how procedures were done, not how they were specifically performed on a particular day. For example, report "patients were divided into two groups and given two different drugs to assess the recovery period’. Always think about what would be relevant to an investigator at another hospital, working on her project on the similar line.
- If well documented procedures were used, report the procedure by name, perhaps with reference, and that's all.
- It is awkward or impossible to use active voice when documenting methods without using first person, which would focus the reader's attention on the investigator rather than the work. Therefore when writing up the methods most authors use third person passive voice.
- Use simple vocabulary and normal prose in this section and in every other section of the project report – avoid informal lists, and use complete sentences.

**What to Avoid**

- Materials and methods are not a set of instructions.

- Omit all explanatory information and background - save it for the discussion.
- Omit information that is irrelevant to a third party, such as what make of the weighing machine you used for weighing the babies or what color ice bucket you used to keep some serum sample tubes.

**(f) Results**

The purpose of this section is to record your findings from the study. This section should be very objective and the page length of this section is set by the amount and types of data to be reported. Continue to be concise, using figures and tables, if appropriate, to present results most effectively.

**Writing a Results Section**

IMPORTANT: You should clearly distinguish here materials that would appear in this section and that should appear in the appendix.

**Content**

- Summarize your findings in text and illustrate them, if appropriate, with figures and tables.
- In text, describe each of your results, pointing the reader to observations that are most relevant.
- Provide a context, such as by describing the question that was addressed by making a particular observation.
- Describe results of control experiments and include observations that are not presented in a formal figure or table, if appropriate.
- Analyse your data, then prepare the analyzed (converted) data in the form of a figure (graph), table, or in text form.
- For quantitative data such as blood pressure records of patients at different dates could be analyzed using proper statistical methods. Describe the methods used.

**What to Avoid**

- Do not discuss or interpret your results, report background information, or attempt to explain anything.
- Never include raw data or intermediate calculations in a research paper. Raw data can be presented in the appendix, if necessary.
- Do not present the same data more than once.
- Text should complement any figures or tables, not repeat the same information.
- Please do not confuse figures with tables - there is a difference.

**Style**

- As always, use past tense when you refer to your results, and put everything in a logical order.

- In text, refer to each figure as "figure 1," "figure 2," etc. with titles; number your tables as well (see the reference text for details). Present one after another following the sequence.
- Place figures and tables, properly numbered, in order at the end of the report (clearly distinguish them from any other material such as raw data, standard curves, etc.)
- If you prefer, you may place your figures and tables appropriately within the text of your results section.

**Figures and Tables**

- Either place figures and tables within the text of the result, or include them in the back of the report; do one or the other
- If you place figures and tables at the end of the report, make sure they are clearly distinguished from any attached appendix materials, such as raw data
- Regardless of placement, each figure must be numbered consecutively and complete with caption (caption goes under the figure)
- Regardless of placement, each table must be titled, numbered consecutively and complete with heading (title with description goes above the table)
- Each figure and table must be sufficiently complete that it could stand on its own, separate from text

**(g) Discussion**

The next part in your research report is the discussion part. Providing a discussion section separately from the results section is better as long as you can discuss the results of your own and compare these with previous results obtained by other authors. Try to be very precise in this section. For your report it is probably better to have a short discussion, not more than 5-6 pages. If you wish, you may combine the results and discussion section together. The objective here is to provide an interpretation of your results and support for all of your conclusions, using evidence from your experiment and generally accepted knowledge, if appropriate. The significance of findings should be clearly described. The followings are the important points that you should have in your discussion part.

- Decide if each hypothesis is supported, rejected, or if you cannot make a decision with confidence. Do not simply dismiss a study or part of a study as "inconclusive."
- You may suggest future directions, such as how the experiment might be modified to accomplish another objective.
- Explain all of your observations as much as possible, focusing on mechanisms.
- Decide if the experimental design adequately addressed the hypothesis, and whether or not it was properly controlled.
- Try to offer alternative explanations if reasonable alternatives exist.
- One experiment will not answer an overall question, so keeping the big picture in mind, where do you go next? What is the implication of your study? The best studies open up new avenues of research. What questions remain?

- Recommendations for specific papers will provide additional suggestions.

**(h) Ethical Considerations**

In nursing research, ethical consideration is very important. Approval from the Ethics committee in your work place is required prior to commencement of research because of the following reasons:

- Participants in research are a part of wider community. Their involvement in enquiries can cause problems, and researchers as well as their supervisors in their hospitals should be aware of the possibility of complications.
- Feelings of anger or resistance can quickly accumulate in specific groups if they are targeted for research. For example, in a research on feeling of the parents towards their autistic children in Kuching, Sarawak, vary substantially between male and female parents. Mothers are willing to express their feeling easily, but the fathers usually remain silent and keep the feelings within themselves. In such a situation research may be conducted with female parents only.
- OUM's student researchers must be prepared to defend what is ethical, and support each other in the move towards knowledge based practice.

The length of this section will depend on whether or not the research is likely to raise any ethical question or not. If there is no serious issue, this section could be very short. However, if the issues are substantial, the issues should be discussed at length.

**A Note on Plagiarism**

Plagiarism is the act of producing another work as your own and copying words and ideas from another researcher or author without properly citing their names. In order to avoid plagiarism, avoid:

- Copying from a book or an internet source.
- Copying your peers' work without acknowledging. Consultation at the time of writing is acceptable but repetitions of the same presentation of another work are penalized.

Many undergraduate students are first time writers of scientific report. They have a tendency to copy while writing literature review and the discussion section. To avoid that tendency, read their report first, modify their ideas and write in your own style.

**(i) Literature Cited or References**

List all literature cited in your paper, in alphabetical order, by first author and second author etc. In a proper research report, only primary literature is used (original research articles authored by the original investigators). Be cautious about using web sites as references - anyone can put just about anything on a web site, and you have no sure way of knowing if it is truth or fiction. If you are citing an on line journal, use the journal citation (name, volume, year, page numbers). Some of your papers may not require references, and if that is the case simply state that "no references were consulted."

**Examples of References:**

**Single author**:

Andrews, S. (1995). *Social support as a stress buffer among human immunodeficiency virus-seropositive urban mothers*. Holistic Nursing Practice, 10(1), 36-43.

**More than one author**:

Chenitz, W.C., and Swanson, J., (1986). *Quantitative research using grounded theory*. In W.C. Chenitz and J. Swanson (Eds). From practice to grounded theory. Qualitative research in nursing (pp, 3-15). Menlo Park, CA: Addison-Wesley.
Paper presented in a conference:

Mohd Kidin Shahran and T.K.Mukherjee., (2007). Learning management of Bachelor of Nursing programme at Open University Malaysia (OUM). Paper presented at the 21st Annual conference of Asian Association of Open Universities (AAOU), Kuala Lumpur, Malaysia, p.94.

**----------END OF COURSE GUIDE----------**