DIPLOMA IN REGISTERED NURSING- ELEARNING

COURSE CODE: NR 032.

COURSE TITLE: NURSING RESEARCH PART II

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COURSE INTRODUCTION

Welcome to this course on Nursing Research part two. This course will prepare you to take part in contributing to the body of knowledge in the health sector. This course is aimed at equipping you with knowledge and skills in conducting research and utilizing the findings to enhance quality health care.

COURSE OBJECTIVES

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

1. Demonstrate an understanding of the research process and importance of research in nursing
2. Discuss ethical issues in research
3. Develop a research proposal and conduct a systematic investigation using the knowledge and skills gained
4. Produce a comprehensive report

Course Duration

Nursing Research is a full course divided into two parts part II is as follows:

Part II

Course hours: 100

Theory: 30 hours

Practical: 70 hours

COURSE CONTENT

This course has one main unit as follows:

Unit 1: Conducting Research

In this unit, you will gain knowledge and skills on how to prepare for data collection, data presentation, data analysis and use of descriptive statistics. You will conduct or implement your research project with the help of your research supervisor and finally write a report and disseminate your research findings to the appropriate and relevant stakeholders.

ASSESSMENT

Your work in this course will be assessed as follows:

Part 1

Continuous assessments

1. Tests- 2 20%
2. Proposal development- 20%

A written research proposal document, on the identified research topic of your choice should be submitted to your supervisor for marking at the end of the second academic year (worth 20%) **Part II**

Continuous assessments

1. Tests- 2 20%
2. Proposal development 20%
3. Research report 60%

A written research report should be submitted to your research supervisor in the seventh month of your third academic year, by both electronic means and hard copy (worth 60 percent of the final mark).

Nursing research requires you to spend some time studying the course, doing the course activities as well as attending to self-help questions and tasks. Please note that the units are not all the same length, so ensure that you plan and space your work to give yourself time to complete all of them. For example, unit 2 part -1 and unit 1 part-2 have a heavy reading schedule and activities.

Activities, self-help questions and case studies

You will find activities, self-help questions and case studies in this course. These are part of a planned distance education programme. They are intended to help you make your learning more active and effective, as you process and apply what you read. They will help you to engage your ideas and check your understanding of the topic. It is vital that you take time to complete them in the order that they occur in your course. Make sure you write full answers to the activities, or take notes of the discussions.

Suggestion for Further Readings

There is a list of Further Readings at the end of this course. This includes books and articles referred to in the course in case you wish to explore topics further. You are encouraged to read as widely as possible during and after the course, though you are not expected to read all the books on this list. Although there is no set requirement, you should do some follow-up reading to get alternative viewpoints.

UNIT 1: CONDUCTING RESEARCH

1.1 Introduction

Welcome to the second part of nursing research course. In this unit you will learn about data collection, analysis and presentation. You will also look at report writing and dissemination of results. By the end of this unit, you will be expected to conduct a systematic investigation using the knowledge and skills gained and produce a comprehensive research report. In this Unit we are going to discuss how data is processed, presented. We will also discuss the various data analysis method you can use with the various types of data you will have collected from the field. At the end of the unit we will discuss how you can write a research report and eventually how to disseminate your findings

1.2 Unit Objectives:

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

1. Discuss data processing,
2. Discuss how data is presentation
3. 'Discuss the various data analysis methods
4. Conduct research and write a research report
5. Disseminate your research findings to appropriate stakeholders

Once data has been collected, you will need to organise, process and analyse it in such a way that you find the answer to the original research question or find solutions to the problem (s) that was researched on.

1.3 Preparation for Data Processing

Now that you know the type of information you need, you have made strategies about your research design, you have selected the data collection techniques and formulated the data collection tool (s), you have selected your sample and determined your sample size, you need to make a plan or make strategies of how you will collect the data from research participants or respondents.

Steps to take when planning for data collection

You only need two major steps. The following are the steps:

1. Make a list of all the tasks that have to be carried out and who should be involved, making a rough estimate of the time needed for the different parts of the study, and identifying the most appropriate period in which to carry out the research i.e. ask yourself these questions:
   - What activities will be carried out?
   - Who will be involved?
   - How much time do I require to complete every task?
   - When is the best time to carry out the research?

2. Schedule the different activities that have to be carried out each week in a work plan.

Why should I develop a plan for data collection?

A plan for data collection should be developed so that:

- You have a clear picture of what tasks have to be carried out, who should perform them, and the duration of these tasks;
- You can mobilise and organise both human and material resources for data collection in the most efficient way, and
- You can minimize errors and delays that may result from lack of planning (for example, the population not being available or data forms being misplaced)

While developing a plan for data collection you may identify problems (such as limited manpower) that will require modifications to the proposal. Such modifications might include adjustment of the sample size or extension of the period for data collection.

Activity-1
In your own words and understanding, explain 3 points involved in each of the two major steps in preparation for data collection.

Well done! Now compare your answers with the ones in the discussion above.

1.3.1 Data Collection Process

This is the process by which data is collected from the field using various methods as discussed in unit 2 of part 1.

Stages in the Data-Collection Process

The process of planning to collect data involves three main stages.

What are the main stages in the data-collection process?

Three main stages can be distinguished in the data-collection process. These are:

- Stage 1: Permission To Proceed
- Stage 2: Data Collection
- Stage 3: Data Handling

Stage 1: Permission to Proceed

You will need to obtain consent from the relevant authorities, individuals, and the community in which the project is to be carried out. This may involve organizing meetings and/or writing letters at national or provincial level, at district, and facility level. For clinical studies this may also involve obtaining written informed consent.

Stage 2: Data collection

When collecting your data, you have to consider:

- Logistics: who will collect what, when, and with what resources; and

Quality control

1.4. Data Collection

This is the process of collecting data from the field using various data collection tools. The following should be considered when collecting data;

1.3.2 Who to collect WHAT Data

When allocating tasks for data collection, it is recommended that you first list them. Then identify who can best implement each of the tasks. If it is clear beforehand that your research team will not be able to carry out the entire study by itself, you might look for research assistants to assist in relatively simple but time consuming tasks.

For example, in a study to evaluate the use of treated mosquito nets in the prevention of malaria in Zambia the following task division can be proposed:

Table 1: Schedule of tasks

Task	**To be carried out by**
Record review	Research team
Interviews with the health centre staff	Principal investigator
Individual health mothers (in the households)	Research team

How long will it take to collect the data for each component of the study?

Step 1: Consider the following:

- The time required to reach the study area(s)
- The time required to locate the study units (persons, groups, records). If you have to search for specific informants (e.g., users or defaulters of a specific service), it might take more time to locate informants than to interview them.
- The number of visits required per study unit. For some studies it may be necessary to visit informants a number of times. For example, if the information needed is sensitive and can be collected only after informants are comfortable with the investigator or if observations have to be made more than once (follow up of pregnant mothers or malnourished children). Allowing time for follow up of non-respondents should also be considered.

Step 2: Next, calculate the number of interviews that can be carried out per day by each member of the research team (e.g. 5 interviews).

Step 3: Then **c**alculate the number of days needed to carry out the interviews. For example:

- If you need to do 100 interviews,
- Your research team of 2 people can do 2x5=10 interviews per day,
- You need 100 ÷ 10 = 10 days for the interviews.

Step 4: Calculate the time needed for the other parts of the study (e.g., 10 days)

Step 5: Determine how much time you can devote to the study. From the examples/calculations above, you will need 30 days to carry out your study

- 5 days for preparation (including pre-testing and finalizing questionnaires)
- 20 days actual field work
- 5 days data processing + preliminary analysis

If the team has 20 days for field work, as in the example above, it can do the study without extra assistance. However, if the research team has only five days available for the interviews, they will need an additional two research assistants to help complete this part of the study.

Sequence in which data should be collected

Start with collecting the already available data. This is essential if the sample of respondents is to be selected from the records.

To use time and transport efficiently, data to be drawn from different sources in one locality should be collected at the same time (for example, interviews with staff in a health centre, review of records at the same health centre and interviews with mothers living nearby should be scheduled together).

1.3.4 When data should be collected

The actual time that the data will be collected is determined by the type of data to be collected and the demands of the project. Consideration should be given to:

- Availability of research team members and research assistants,
- The appropriate season(s) to conduct the field work (if the problem is season-related or if data collection would be difficult during certain periods),
- Accessibility and availability of the sampled population, and
- Public holidays and vacation periods.

Note: The field visit to obtain consent from local authorities for the research may also be used to obtain necessary details about the best period for data collection and availability of local resources (research assistants, transport), if required.

1.3.5 Ensuring quality of data

It is extremely important that the data you collect are of good quality, that is, reliable and valid. Otherwise you may come up with false or misleading conclusions.

The following biases should be prevented:

- Deviation from the sampling procedures set out in the proposal
- Variability or bias in observations or measurements
- Variations in criteria for measurement or for categorizing answers as a result of changing them during the study.

There are a number of measures that can be taken to prevent and partly correct such distortions, but remember prevention is FAR better than cure! Cure is usually surgery: you may have to cut out the bad parts of your data or, at best, devise crutches.

Are there other aspects of data collection process that will help to ensure quality?

Of course yes. You should:

1. Prepare a field work manual for the research team as a whole**,** including:
    - Guidelines on sampling procedures and what to do if respondents are not available or refuse to cooperate
    - A clear explanation of the purpose and procedures of the study, which should be used to introduce each interview, and
    - Instruction sheets on how to ask certain questions and how to record the answers.

2. Select your research assistants, if required, with care. Choose assistants that are:
    - from the same educational level;
    - knowledgeable concerning the topic and local conditions
    - not the object of study themselves; and
    - not biased concerning the topic (for example, health staff are usually not the best interviewers for a study on alternative health practices)
3. Train research assistants carefully in all topics covered in the field work manual as well as in interview techniques and make sure that all members of the research team master interview techniques such as:
    - asking questions in a neutral manner;
    - not showing by words or expression what answers one expects;
    - not showing agreement, disagreement, or surprise; and
    - recording answers precisely as they are provided, without sifting or interpreting them
4. Pre-test research instruments and research procedures with the whole research team, including research assistants.
5. Take care that research assistants are not placed under too much stress (requiring too many interviews a day; paying per interview instead of per day).
6. Arranging for on-going supervision of research assistants. If, in case of a larger survey, special supervisors have to be appointed, supervisory guidelines should be developed for their use.
7. Devise methods to assure the quality of data collected by all members of the research team. For example, quality can be assured by:
    - Requiring interviewers to check whether the questionnaire is filled in completely before finishing each interview;
    - Asking the supervisor to check at the end of each day during the data collection period whether the questionnaires are filled in completely and whether the recorded information makes sense;
    - Having researchers review the data during the data analysis stage to check whether data are complete and consistent.

Stage 3: Data Handling

Develop a clear procedure for handling and storing data once it has been collected as follows:

- First, check that the data gathered are complete and accurate (see section on quality control above)

- Decide when questionnaires should be numbered and who should number them.
- Identify the person responsible for storing data and the place where they will be stored.
- Decide how data should be stored. Record forms should be kept in the sequence in which they have been numbered.

SELF ASSESSMENT TEST

1. How many major stages are involved in the data collection process

a. 1
b. 2
c. 3
d. 4

2. One of the following is a main stage in the data collection process;

a. Data handling
b. Data presentation
c. List of participants
d. Schedule for principle investigator

3. Calculating the number of interviews to carryout per day is addressed in step.....of the data collection process

a. 1
b. 2
c. 3
d. 4

ANSWERS

1. C
2. A
3. B

1.4 Data Analysis and Presentation

After you have collected data from the field, you need to do the following data analysis procedure:

- Sorting the data,
- Performing quality-control checks,
- Data processing, and
- Data analysis

Sorting the data: If you have different study populations e.g. mothers with under- five children and nurses at the health centre, number the questionnaires separately.

Performing quality control checks: before and during data processing, you will need to check the data for consistency and completeness. Completeness means that the questionnaire or interview schedule should be completely filled. Consistency means that the answers to the questions should make sense e.g. if a respondent answered “No” to a question “Do you smoke” and gave an answer “10” to the question “how many cigarettes do you smoke per day”? The second answer is definitely not consistent with the first. It is most likely that the interviewer made a mistake in recording the answer to the first question.

What should you do in case of inconsistencies and incomplete questionnaires?

In case of inconsistencies or incomplete questionnaires, you should do the following:

- In case the questionnaire is not filled up completely, then you will have some “missing data” on some of the variables. If a number of questions are not completed in one questionnaire, you should exclude the questionnaire from analysis.
- If you suspect that the inconsistency is purely a mistake of the recorder, get back to the recorder and have it corrected
- If it is less likely that the inconsistency is a mistake of the recorder, return to the respondent and have it corrected if possible.
- If it is not possible to return to the recorder, that particular question should be excluded from analysis.

A decision to exclude a questionnaire (s) from data analysis should be considered carefully as this may affect the validity of the results. If you have to exclude some questions because of inconsistencies or incompleteness, you need to take count of them and discuss them honestly in your research report.

Data processing: data can either be processed manually or by use of computer. Data processing involves:

- Categorizing the data,
- Coding, and
- Summarizing the data on master sheets.

Categorizing the data: some of the variables may have been categorized before data collection depending on the level of knowledge on the topic, For example:

- Categorical variables like sex which has two values “male” and “female”.

  Sex
  1. Male
  2. Female
- Data on numerical variables is usually collected without categories. You should now decide how you will categorize and code them. For example: The ages of Prime gravida attending antenatal clinic at the health centre can be 12, 30, 18, 35, 15, 20, 40, 45, 25, 28, 16, 22, 38, 48, 25, 42, 24, 36, 32 23.

  These could be categorized as:

  Age (in years):
  1. < 20 years
  2. 21 years – 25 years
  3. 25 years – 30 years
  4. 31 years – 35 years
  5. > 35 years

Coding**:** convert (translate) the data gathered during the study into symbols appropriate for analysis e.g. consider the variable “sex” which has two categories “male” and “female”. Assign codes as follows:

1. Male code 1
2. Female code 2

So that it appears as:

Sex

1. Male
2. Female

Summarizing on the Data Master Sheet: If you are processing data manually, it is convenient to summarize the raw research data on a data master sheet to facilitate analysis. On a data master sheet, all the answers of individual respondents are tallied by hand.

Table 2: Example of a data master sheet

Respondent or questionnaire number	Q1: Age				Q2: Sex		Q3: Marital status		
	20 –2 5 years	26 -30 years	31 – 35 years	36 – 40 years	Male	Female	Single	Married/cohabiting	Separated/divorced/widowed
1	√				√		√		
2			√			√		√	
3				√		√			√
Total	1	0	1	1	1	2	1	1	1

Answers to open ended questions can be compiled manually using data master sheets.

Manual compilation is used when the sample size is small.

1.5 Data analysis and presentation techniques

There are two types of data analysis; quantitative and qualitative analysis. We are going to discuss each one of them.

1.5.1 Quantitative Data Analysis

Quantitative and qualitative data are analysed using different methods. The two types of data will therefore be discussed separately.

Remember during the development of your research proposal, you selected variables that you either believed to have helped describe the problem (dependent variable) or to have influenced the problem (independent variable) under study. The purpose of data analysis is to determine which variables best describe the problem and the factors influencing the problem, and how the data answer the research questions outlined in the objectives.

It is important to summarize the information that you obtained on each variable in simple tabular form or in figures before analysing how these variables affect each other.

You may have numerical or categorical data arising from the variables after data collection. When analysing your data, it is important to determine what type of data you are dealing with through description of the variables. It is important that you should describe your variables because:

- It helps in organizing the approach to statistical methods
- The type of data used largely determines the general type of statistical techniques that are applicable.

In describing variables, we shall look at the following:

- Types of data
- Examination of numerical data (presentation through tables and figures, Percentages, proportions, ratios, and rates, Measures of central tendency)

Types of Data

There are two types of data, namely:

- Categorical data
- Numerical data

Let us look at the two types of data one at a time.

Categorical Data

There are two (2) types of categorical data, these are:

- Nominal data
- Ordinal data

Nominal Data

- This is a set of data organised in categories or names that cannot be ordered one above the other (none of the categories or names are greater or less than the other). There is no value meaning attached to the categories.

For example 1: Marital status has the following categories:

Marital status

1. single
2. married
3. widowed, separated, divorced

Note that the categories for the variable marital status are not ordered one above the other i.e. a person who is single is not greater or less than a person who is married. The numbers assigned to the categories are codes and not values.

Example 2: Sex

1. Male
2. Female

Being male does not make one greater or less than being female. The numbers assigned to the categories are codes and have no value attachment.

Ordinal Data

- Variables are also divided into a number of categories which are ordered one above the other in either descending or ascending order i.e. from lowest to highest or vice versa

Example 1: Level of knowledge

1. Good,
2. Average,
3. Poor

Note that the categories in ordinal data are arranged according to magnitude; **"good"** is higher than **"average"**. Just like in nominal data, the numbers assigned to the categories are codes and not values.

Numerical Data

- Numerical data are expressed in numbers that can either be discrete or continuous

Examples of discrete numbers:

- Height e.g. 10 metres
- Temperature in degrees Celsius e.g. 38^0C
- Age to the last birthday e.g. 20 years

Note that the numbers are rounded off to the nearest whole number

Examples of continuous numbers:

Age (in years)

1. 0 - 4.5 years
2. 4.5 - 9.5 years
3. 9.5 - 14.5 years
4. 14.5 - 19.5 years

Note that the categories are arranged in order of magnitude. They are continuous in the sense that there is no gap from one category to the other. The numbers assigned at the beginning of the categories are codes.

Examination of Numerical Data

Numerical data can be examined through:

- Frequency distributions,
- Percentages, proportions, ratios, and rates
- Figures,
- Measures of central tendency

1.5.2 Use of Elementary Descriptive Statistics

Frequency Distributions

- A frequency distribution is a description of data presented in tabular form so that data will be more manageable. It gives the frequency which (or the number of times) a particular value appears in the data.
- Frequency distribution can be done on all types of data

Examples of frequency distributions

1. Categorical Data: You have collected data on the variable “Marital status”. Your sample size was 100. The frequency distribution table for this variable will look like this:

Table 3: Marital status of primigravida women

Marital status	Frequency	Relative frequency
Single	20	20%
Married/cohabitating	50	50%
Separated/divorced/widowed	30	30%
Total	**100**	**100%**

Table 1 show that half of the primigravidas who attended antenatal clinic for the first time were married.

2. Numerical data

Table 4 : Age of primigravida women on 1st ANC

Age (in years)	Frequency	Relative frequency
20 - 25	10	10%
26 - 30	70	70%
31 - 35	15	15%
36 - 40	5	5%
Total	**100**	**100%**

Table 2 shows that majority (70%) of primigravida women attending antenatal for the first time were aged between 26 years and 30 years.

Percentages, Proportions, Ratios, and Rates

- A percentage is the number of units with a certain characteristic divided by total number of units in the sample and multiplied by 100. Example from table 1 on the marital status of primigravida women; the percentage (%) of married women can be calculated as: 50/100 x 100 = 50%

- A proportion is a numerical expression that compares one part of the study units to the whole; a proportion can be expressed as a FRACTION or in decimals e.g. the proportion of single primigravida women is 20/100 = 1/5 or 0.2
- A ratio is a numerical expression which indicates the relationship in quantity, amount or size between two or more parts. E.g. the ratio of male to female is 10:30, which is 1:3.
- A rate is the quantity, amount or degree of something measured in a specified period of time e.g. Birth rate, death rate, infant mortality rate, maternal mortality rate

Figures

- It may be better to present the most important data in figures if your report contains many descriptive tables.
- The most frequently used figures for presenting data include:
  - Bar charts and pie charts for categorical data
  - Histograms, line graphs, scatter diagrams for numerical data and
  - Maps

Here are examples of figures in pictorial form:

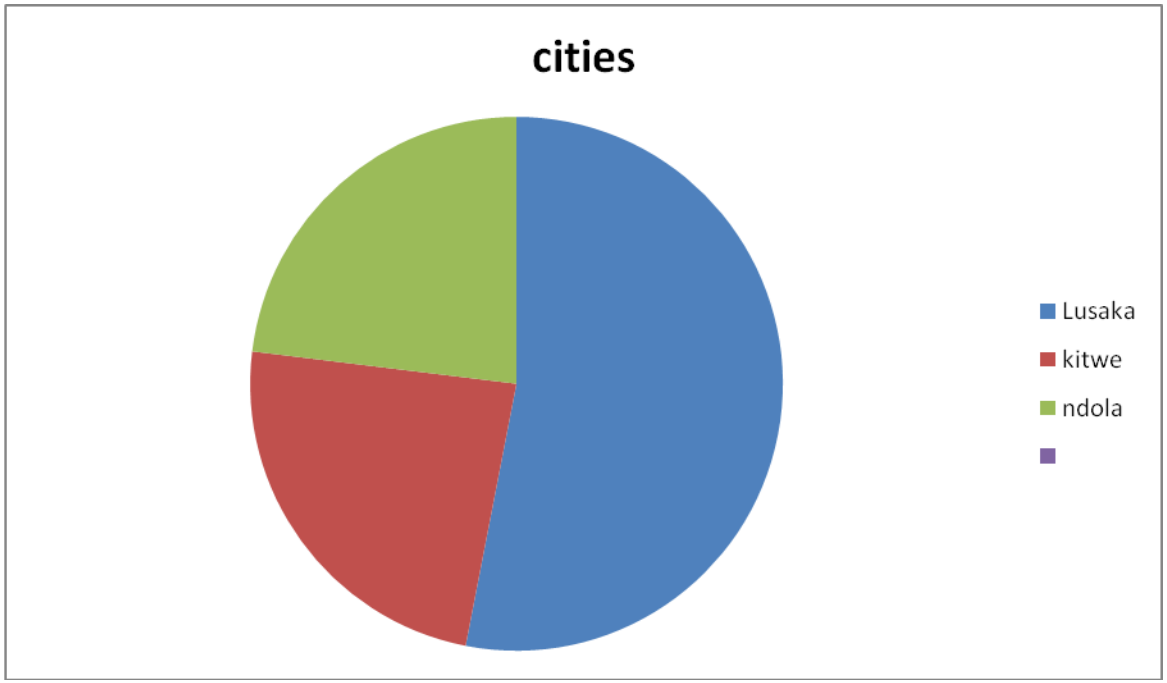

Figure 1: Pie Chart

A pie chart illustrates relative frequency of a number of items. All segments of a pie chart should add up to 100%. For example: residence of soccer fans watching football at a stadium (sample was 50); Lusaka = 30 (60%), Kitwe = 10 (20%) and Ndola = 10(20%).

This was calculated as follows:

Lusaka = 30/50 = 0.6 x 100 = 60%

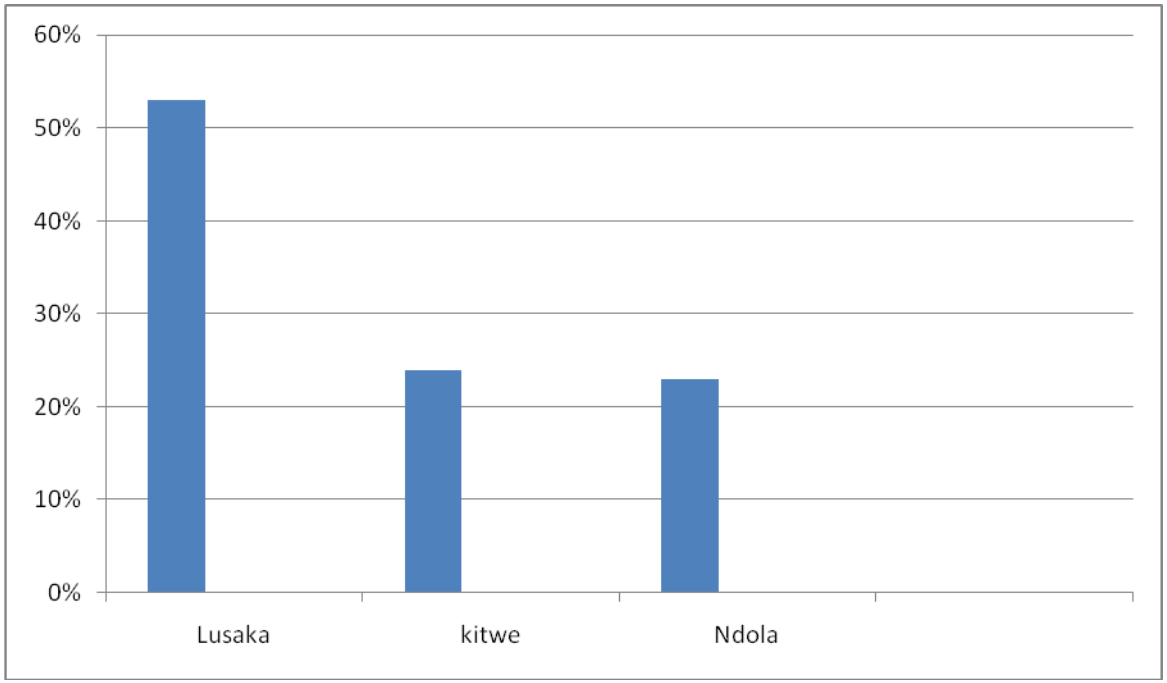

Figure 2: Bar Chart: Diagrammatic presentation of frequency data

Guidelines

1. Label the frequencies along the vertical axis (y) and categories of the variables on the horizontal axis (x)
2. Construct a rectangle over each with the height representing the value of the category
   Note: Bar charts always have a space between categories on the horizontal axis (x).
3. Data can be presented using either absolute frequencies or relative frequencies. Absolute frequencies are actual numbers the units appear in the distribution while relative frequencies are percentages

Variations of bar charts

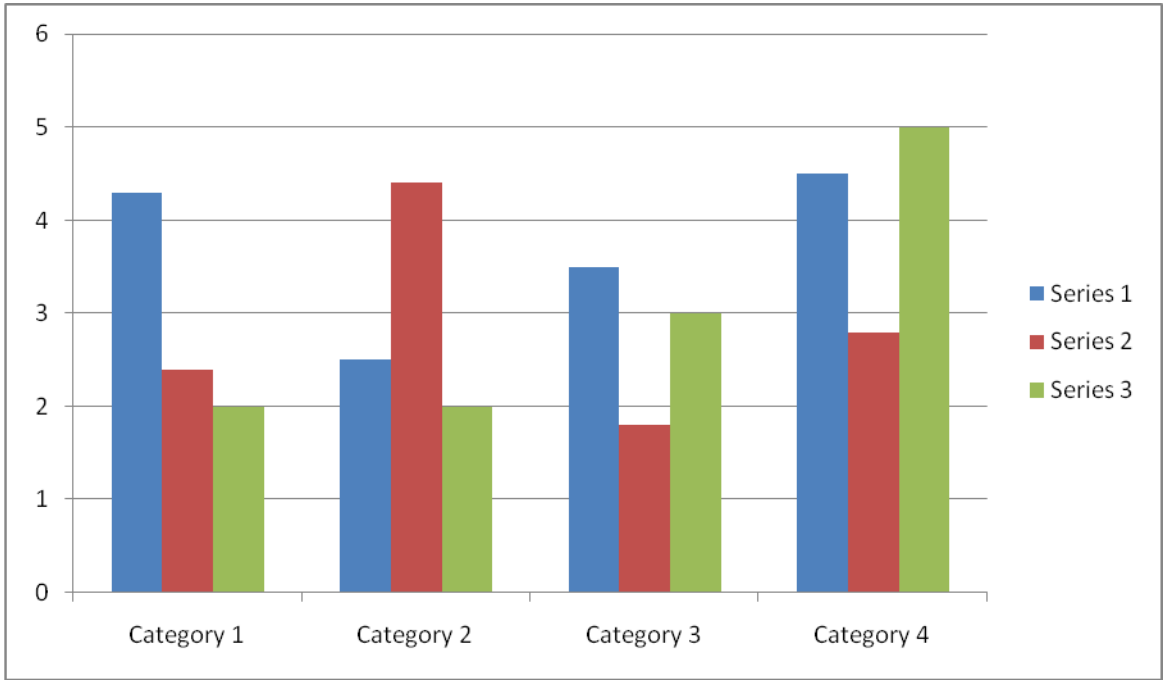

Figure 3: Multiple Bar Charts

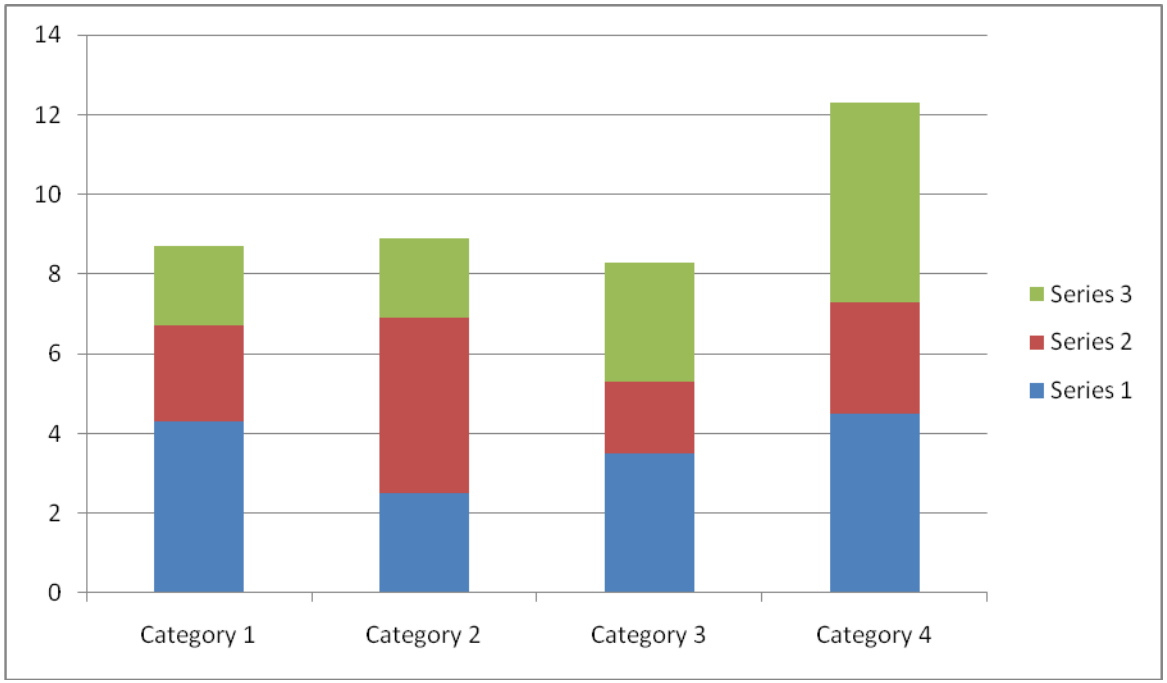

Figure 4: Multiple Bar Charts

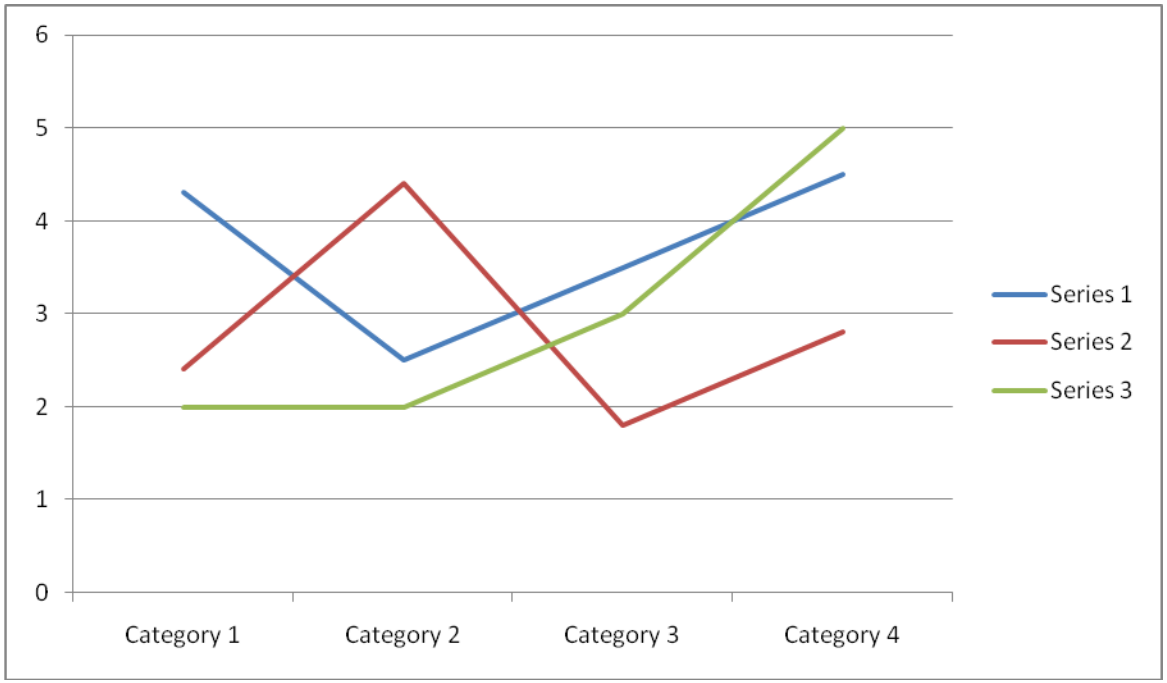

Figure 5: Different styles of Line Charts

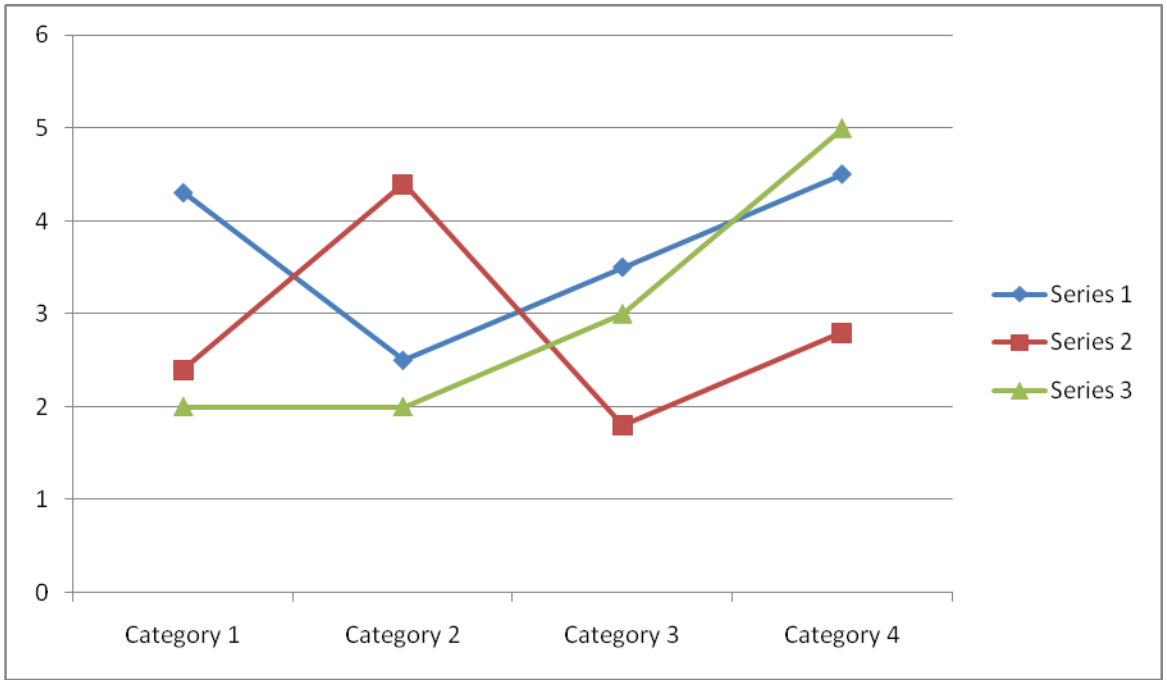

Figure 6: Line chart 2

Histograms

Definition: this is a diagrammatic presentation of the frequency distribution of a quantitative variable, with areas of rectangles proportional to the class frequency.

Types of Histograms

1. Frequency histogram
2. Relative frequency histogram
3. Frequency polygon

These types of graphs are applicable in quantitative data especially continuous type of data. Data must first be organized prior to construction of graphs.

Guidelines

1. Label frequencies along the vertical axis (y) for frequency histogram. Use percentage (%) on the vertical axis (y) instead of values for relative frequency histogram. The choice depends on what you want to do.
2. Label class intervals along the horizontal axis (x) using true limits
3. Given frequency distribution, construct a rectangle over each class interval with the height equal to number of observations in that particular interval.
4. Do some scaling on the vertical axis.

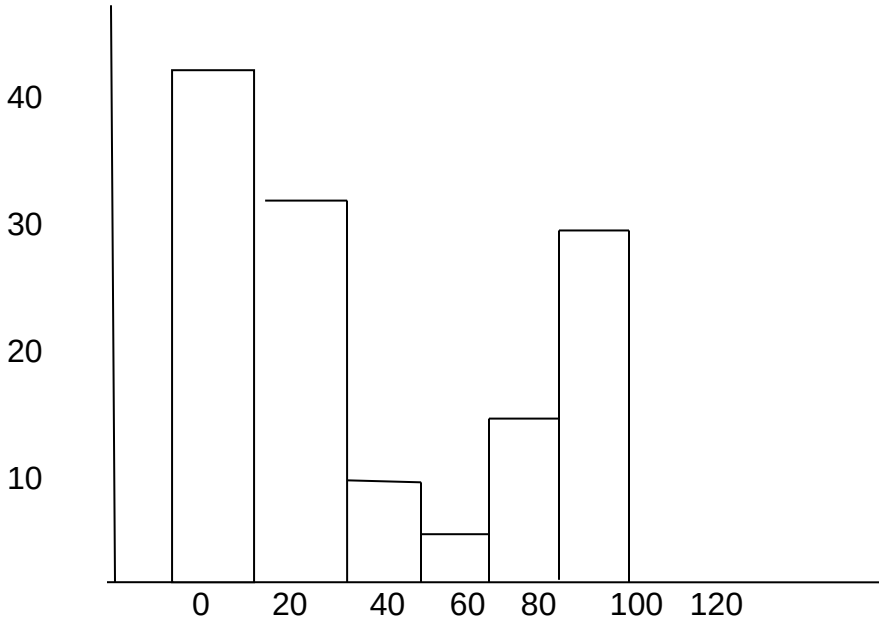

Figure 7: Construction of a histogram

Frequency polygon

Once you have a histogram, draw lines connecting mid-points of class intervals. Draw imaginary lines prior to the preceeding interval, continue to the last class interval. It gives an idea of pattern of distribution.

Checkpoint questions

Answer the following questions using true (T) or false (F);

1. A pie chart illustrates relative frequency of a number of items.....T/F
2. All segments of a pie chart should add up to 80%.....T/F
3. A Histogram is a diagrammatic presentation of the frequency distribution of a quantitative variable, with areas of rectangles proportional to the class frequency.....T/F

ANSWERS
1. T
2. F
3. T

Numerical Descriptive Measures

These are used in situations where you want to convey a mental picture where graphs may not suffice e.g. statistical inferences. They are much more convenient in situations requiring verbal communication. Numerical techniques are divided into the following categories. For your course, we shall discuss the measures of central tendency i.e. Mean, Median and Mode.

Measures of Central Tendency

These are measures that try to describe clustering of data around some point. The measure indices are mean, median and mode. Data can be measured either as grouped or ungrouped.

1: Ungrouped Data

Mode:

- The mode is the most frequently occurring value in a set of observations. It is that measurement that occurs most often in the distribution i.e. the measurement whose frequency is highest e.g. ages of grade three children at a certain primary school.
- Mode is not very useful for numerical data that are continuous. It is most useful for numerical data that have been grouped into classes.
- Mode can also be used for categorical data, whether they are nominal or ordinal

Example: ages of grade three pupils at a primary school.

n (sample size) = 25

Ages = 7, 7, 10, 8, 11, 9, 9, 9, 8, 9, 8, 9, 9, 9, 8, 9, 8, 8, 8, 9, 10, 11, 10, 7, 10, 9, 7

Create an array in ascending order = 7, 7, 7, 8, 8, 8, 8, 8, 8, 9, 9, 9, 9, 9, 9, 9, 9, 9, 9, 10, 10, 10, 10, 11, 11

Mode = 9

Median:

- Median is the middle value in a distribution when observations are arranged in order of magnitude.
- The median is the value that divides a distribution into two equal halves.
- Median is useful when some measurements are much bigger or much smaller than the rest. The mean of such data will be biased toward these extreme values.
- The mean is not a good measure of the centre of the distribution in this case

- The median is not influenced by extreme values.

There are two (2) methods of getting median:

1. When you have **even** numbered values, median is average of two middle values when observations are arranged in order of magnitude:

   Example: n = 10
   Observations: 95, 86, 78, 90, 62, 73, 89, 92, 84, 76
   Create an array: 62, 73, 76, 78, 84, 86, 89, 90, 92, 95
   Calculate the medial position: $= \frac{n+1}{2} = \frac{11}{2}$ = 5.5

   The observation on the 5.5th position is the median, so add the two (2) observations occupying the 5th position and divide by two (2) to obtain the observation on the 5.5th position. The answer is the median.

Median = $\frac{84+86}{2}$

= 85

2. When you have an **odd** number of measurements, pick the middle value in the distribution:
   Example: n = 11
   Observations: 95, 86, 78, 90, 62, 73, 89, 92, 84, 76, 60
   Create an array: 60, 62, 73, 76, 78, 84, 86, 89, 90, 92, 95

   Medial position $= \frac{11+1}{2}$ = 6

   Therefore, the observation on the 6th position is the median.

   Median = 84

Mean:

- Is referred to as arithmetic mean of a set of measurements. It is the sum of observations divided by total number of measurements.
- The mean (or arithmetic mean) is also known as the AVERAGE. It is calculated by totalling the results of all the observations and dividing by the total number of observations.
- Mean can only be calculated for numerical data.

Symbol for population mean = μ

Symbol for sample mean = x

Sample mean is used to estimate population mean.

Formula

$$x = (\sum x)/n$$

i.e. summation of all values in the distribution divides by number of observations.

Example: overdue accounts at ZANACO

n (sample size)= 15

N (population size) = 150

55, 200	4, 880	271, 950
18, 060	180, 290	365, 290
28, 160	399, 110	807, 800
44, 140	97, 470	9, 980
61, 610	56, 890	82, 730

Using the formula for sample mean, every account holder is expected to have 165,570 overdue on the account. And therefore, the amount due for entire population of account holders is:

NX = 150 x 165, 570

= K24, 835, 500=00

Advantages of mean: it allows for further calculation (manipulation) of other figures.

The Weighted Mean

This is the average weights ascribed to values in the distribution.

Example 1

Two students obtained the following marks in research tests. Which student got higher marks than the other?

	Students 1	**Weight**	**Student 2**
Test	70	20%	90
Proposal	90	30%	85
Exam	85	50%	70

You have to calculate the mean in order to know which student got higher marks than the other.

- If you use the formula for MEAN, i.e. $x = (\sum x)/n$ and disregard the weights, then both students obtained the same mark which is 81.7%. But this is wrong because each section had a different weight (frequency). Therefore, the correct formula for weighted mean is:

- $X = \frac{\sum WiXi}{\sum Wi}$

Student 1

		$WiXi$
70 x 20	=	1400
90 x 30	=	2700
85 x 50	=	4250
		8 350

$\sum Wi$ = 100

X = 8350 / 100 = 83.5%

Student 2

		$WiXi$
90 x 20	=	1800
85 x 30	=	2550
70 x 50	=	7850
		7 850

$\sum Wi$ = 100

X = 7850 / 100 = 78.5%

Therefore, student 1 performed better than student 2.

CROSS TABULATIONS

- Depending on your objectives and study type, you may need to examine relationships between several of your variables at once in order to adequately describe your problem or identify possible explanations for it.
- In such a case, you can design cross-tabulations

Types of Cross-Tabulations

There are three different types of cross tabulations. Let us now review them.

- Cross-tabulations to describe the sample
- Cross-tabulations in which groups are compared to determine differences
- Cross-tabulations that focus on exploring relationships between variables

The types of cross tabulations will be illustrated one at a time.

Cross Tabulations to Describe the Sample: this aim at giving a description of the problem under study using a combination of variables. The descriptive cross tabulations can also be used to describe the sample of research in terms of background variables such as sex, age, marital status, religion, residence, educational status, profession, occupation etc.

Example 1: Descriptive cross tabulation to describe the problem under study.

Table 5: Patients with post operative wound infection (n = 50)

Day of onset of infection	**Patients with wound infection**		**Total**
	Used home remedies	**Did not use home remedies**	
1 - 3	5 (10%)	0	5
4 - 6	20 (42%)	2 (100%)	22
7 - 9	23 (48%)	0	23
Total	48 (100%)	2 (100%)	50

Example 2: Descriptive cross tabulation to describe the sample of research subjects

Table 6: Sex and level of education of respondents (n =100)

Level of education	**Sex**		**Total**
	Male	**Female**	
Never been to school	10 (17%)	10 (25%0	20
Primary	25 (42%)	15 (38%)	40
Secondary	20 (33%)	10 (25%)	30
Tertiary	5 (8%)	5 (12%)	10
Total	60 (100%)	40 (100%)	100

Cross-Tabulation to Determine Differences between Groups: This is appropriate in comparative studies such as case control studies, cohort studies in which some objectives focus on establishing if there are any differences that exist between two or more groups.

Example 1: In a study to determine factors contributing to low levels of acceptance of family planning among members of the community, one of the objectives was to establish whether there is a difference in knowledge levels on family planning between those who attend family planning clinics and those who do not. The table below was drawn to determine the differences between the two groups in terms of knowledge of benefits of family planning.

Table 7: Level of knowledge on benefits of family planning (n = 100)

Attendance status	**Level of knowledge on benefits of family planning**			**Total**
	Low	**Average**	**High**	
Attendees	5 (13%)	15 (40%)	20 (50%)	40 (100%)
Non attendees	5 (8%)	15 (25%)	30 (50%)	60 (100%)
Total	10	30	60	100

Note: that the dependent variable (outcome) should be placed in the column while the groups to be compared (independent variable) should be placed in the rows. The totals for each of the groups to be compared should be 100%. Statistical tests can be applied to analyse the above data.

Cross Tabulations to Explore Relationships between Variable

These seek to explore possible relationships or associations among variables. You should consider whether the variable is dependent or independent.

Example 1: In a study to determine factors that contribute to malnutrition among children under the age of 5 years admitted to the malnutrition ward, one of the objectives was to establish whether a relationship existed between working status of mothers and duration of breast feeding. The following table was drawn:

Table 8: Working status of mothers in relation to malnutrition

Working status of mother	**Duration of breast feeding**			**Total**
	0-5 months	**6-11months**	**>12 months**	
Full time employed				
Part time employed				
Not employed				
Total	100%	100%	100%	

Such a cross tabulation can be subjected to statistical analysis

Constructing Cross-Tabulations Appropriate for the Research Objectives

It is recommended that you use the following steps in order to construct appropriate cross tabulation tables:

- Make a review of each specific objective and the method chosen for collecting the relevant data.
- Formulate hypotheses that you consider to be the type of conclusions you expect to reach concerning each objective.
- Construct the dummy cross-tabulations that will enable you to reach the right conclusions.
- Using the data master sheets, perform the appropriate frequency counts and enter the results in the cells of the cross-table.
- Interpret the table and write a clear conclusion. Do not describe the content of the table in detail.

Hints on Construction of Tables

- Ensure that you have specified all the categories of the variables to be presented in the tables and that they are mutually exclusive (i.e. No overlaps and no gaps)
- Check that the column and row counts correspond to the frequency counts for each variable.
- Ensure that the grand total in the table corresponds to the number of observations in the sample

How to Deal With Confounding Variables

You can achieve this through stratification and matching of variables. Here is how to do it:

Stratification

- Check for the presence of confounding variables. Remember that confounding variables can either weaken or strengthen the relationship between an independent and a dependant variable.
- Carry out a separate analysis for the different levels of the confounding variable.
- If similar association between working status and duration of breast feeding in both groups of mothers is found, then this indicates that the educational level of the mother is not a confounding variable.

Matching

- Match each subject in the study group with another subject in the control group for the particular confounding variable.
- Pair data when constructing cross-tabulations and doing the analysis.
- Appropriate statistics should be used to examine paired observations.

1.5.2 Qualitative data analysis

Data collected using qualitative research methods such as open ended questions, Focus Group Discussions (FGDs) or unstructured interviews or loosely structured interviews and observations are analyzed using qualitative data analysis methods.

When you collect qualitative data, you will end up with a large number of pages of written text that will need to be analyzed.

Analysis of qualitative data differs from quantitative data in procedures and outcomes but the principles are similar. Just like in quantitative analysis, you will be required to undertake the steps below to analyze quantitative data:

Steps in qualitative data analysis

- Description of the sample population
- Ordering the data in relation to the objectives/research questions
- Categorizing or labeling answers that have similar characteristics or patterns
- Displaying the summarized data in charts and figures such as matrices and diagrams or tables to visualize possible relationships between certain variables
- Identifying variables and associations between variables
- Finding confounding or intervening variables
- Looking for logical chains of evidence

These steps will now be explained one at a time.

Description of sample population

- Tabulate relevant background data e.g. age, sex, occupation, education, marital status etc
- The following information is also required in order to place the data in their right context:

✓ Who the key informants were.
✓ Who were the participants in the focus group discussion/interview?
✓ To what extent was the sample representative of the groups they represented?

- The circumstances under which the observations were carried out

- Who was observed and who was not?
- What were the reactions of those observed?

After you have described the sample population, you need to order and code the data. The explanation below will help you do it.

Ordering and coding data

- Immediately after each interview or Focused Group Discussion (FGD), transform the raw field notes (tape recorder) into a well organized set of notes
- You should also include your own observations and comments
- You should order and reduce data in relation to the objectives or discussion topics
- Use codes for ordering data
- Codes for qualitative data are usually labels which can easily be remembered

Examples of codes: suppose you carried out a FGD on circumstances leading to early pregnancies among school going girls, you might code the data as follows:

- Lac Recre - Lack of recreation
- No Val Sch - No value for school
- Per Pre - Peer pressure
- Lov fo Wlt - Love for wealth
- Cul Val - Cultural values
- Pre Fr Pare - Pressure from parents
- Lk rol mod - Lack of good role models

Summarizing data by graphic displays in charts and figures

After you have ordered the data, summarize it by:

- Listing the data that belong together. If codes were used, list all the data that have been given the same code. Remember to identify the source for each item

- Further summarize data graphically in a chart (e.g. matrix) or figure (e.g. diagram, flow chart) especially when there is need to interpret large amounts of data.

The findings can be recorded graphically in charts e.g. (matrix) or a figure (e.g. diagram, flow chart). Below is an example of a chart called a matrix.

Example of a matrix

Table 9: Matrix table on early pregnancies among school girls in urban and rural areas

Residence	**Type of recreation**	**Role models**	**Value for school**	**Love for money**
Urban girls	-patronizing bars -going to movie theatres -going for parties	-movie stars -musicians	-somewhat valued	-loves wealth openly
Rural girls	-recreation forbidden	-married women and girls	-not valued	-loves wealth secretly

1. Is there any difference between the matrix table for qualitative data and the frequency table or cross tabulation table for quantitative data?
2. What conclusions can you draw from the above table**?**

Write down the difference on a piece of paper.

Well done! Now compare your answer with ours.

1. Yes, there is a difference between the matrix for qualitative data and the frequency table or cross tabulation table for quantitative data. In quantitative data, numbers are written in the text whereas in qualitative data, text or narrations are written in the cells.

2. There is a difference in circumstances that lead to early pregnancies among school girls in urban and rural areas.

Note that by displaying the results in graphic form, you are already analyzing the data. Matrices are the commonly used form of graphic display of qualitative data. You can use matrices to order information in various forms e.g.

- Type of informants
- Type of activity
- Location of data collection
- Reasons for certain behaviour
- Time sequence

You as a researcher are permitted to include your own comments.

Example of a Diagram

The reasons or circumstances that lead to early pregnancies among school going girls can be summarized on a diagram after data collection. Note that this diagram looks like the problem analysis diagram you encountered when you were analysing your research problem under proposal development.

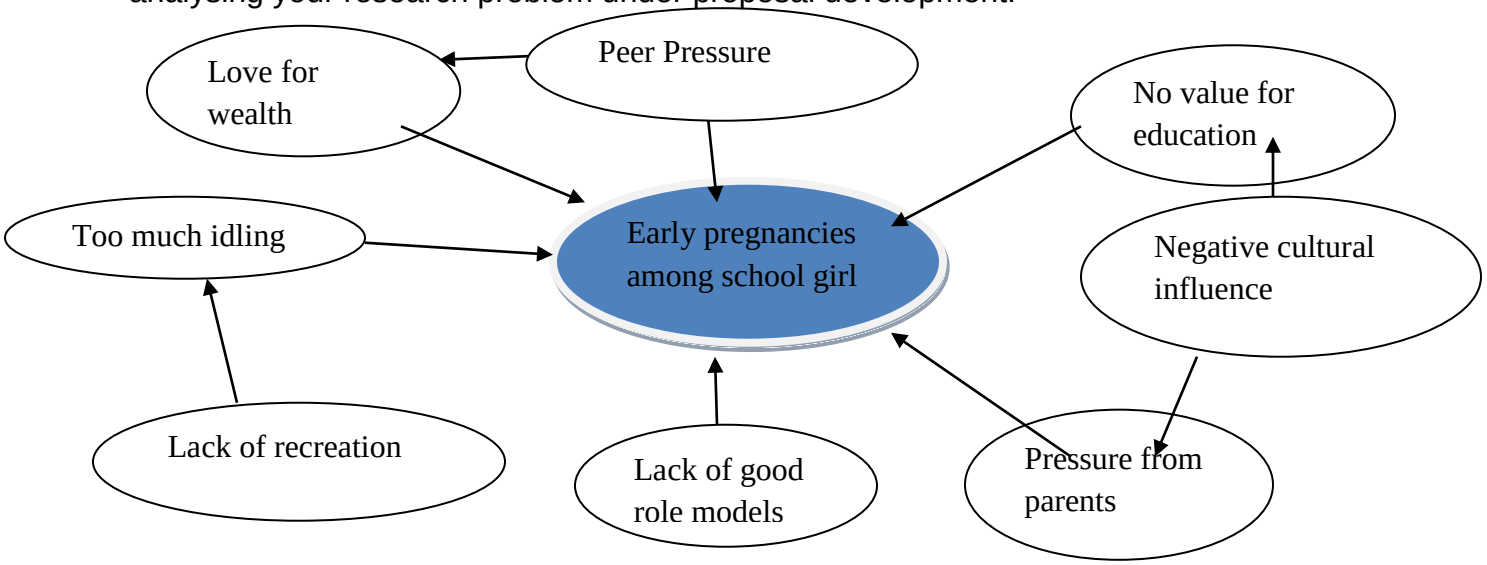

Figure 8: Problem Analysis Diagram

So what is the difference between the two diagrams?

Well, in the earlier problem analysis diagram, you as a researcher had an insight into the factors that could have contributed to the problem under study but you needed to either find associations or relationships or describe the situation.

In this case, you had no insight into the circumstances that lead to early pregnancies among school going girls in rural and urban areas. So you needed to carry out an in depth study through FGD to establish these circumstances. You could at a later date carry out a study to establish the relationships between the circumstances that you have now identified and early pregnancy in form of a quantitative study.

After summarizing the findings, write a narrative text to present and discuss your findings. You may place the figures in the appendix. You used figures during analysis to keep you focused on your objectives.

Drawing and verifying conclusions is the essence of data analysis

- When we start summarizing data, we continuously draw conclusions, modify or reject quite a number of them as we proceed
- Writing helps generate new ideas as well and therefore, should start as early as possible, right from the onset of data processing and analysis
- Drawing and verifying conclusions can be done through:

✓ Identifying variables and associations between variables
✓ Finding confounding or intervening variables
✓ Looking for logical chains of evidence

Strategies for testing or confirming findings to prove validity

It is important to confirm your findings to prove validity. You can do this by:

- Checking for representativeness of data
- Checking for bias due to observer bias or the influence of the researcher on the research situation
- Cross-checking data with evidence from other independent sources. The data should confirm or at least contradict each other

- Comparing and contrasting data by including different categories of informants
- Using extreme (groups of) informants to the maximum
- Doing additional research to test the findings of your study
- Getting feedback from your informants

Self assessment Test

Answer the following questions using true (T) of false (F)

1. The mode is the most frequently occurring value in a set of observations.....T/F
2. The mode cannot be used for categorical data whether nominal or ordinal.....T/F
3. The median is the value that divides a distribution into two equal halves.....T/F
4. There are two different types of cross tabulations.....T/F
5. Data can be presented using Bar charts, Histograms, Pie charts Frequency tables etc.....T/F

ANSWERS

1. T
2. F
3. T
4. F
5. T

When you are through with analyzing, and interpreting your data and have discussed the findings of your study, you will write a research report discussed below.

1.6 Report Writing

You will go through a series of steps when preparing your research report. The research report is one of the tools or methods you can use to disseminate your research findings. It will help you convey information about your research findings to the reader.

Steps in preparing a report

You need to consider the following;

Step One: Audience

Remember that the research report is meant to convey information to the reader of your research findings. So what should you do? Well, start by clarifying in your mind as to:

- Who your reader is.
- Why the reader should want to read your research report.

The report should meet the needs of the audience.

Step Two: How the reader reads a Research Report

- Most readers begin with conclusions. The research conclusions summarize the research findings.
- Make this section interesting, useful, and attractively presented to attract the reader to look at other sections
- Other sections of the report are intended to support the conclusions by helping the reader clarify two basic questions in their minds
- Researchers will most likely be interested in the methodology section rather than the conclusions while a manager will be more interested in the conclusion
- Therefore, summarize “new information” in the conclusion section of the study

Step Three: Completing the data analysis

Before beginning the outline and first draft of your report, review your analysis of data by asking yourself:

1. Whether the conclusions are appropriate to the specific objectives and are comprehensive
- Check that the earlier steps in data analysis should have produced one or more conclusions stated as simple sentences and one or more analytical tables together with the relevant descriptive statistics or statistical tests to support the conclusions

- Review these conclusions and check whether every specific objective has been dealt with, all aspects of each objective has been dealt with and the conclusions are relevant and appropriate to the objectives.

2. Whether further analytical tables are needed
- Prepare further dummy analytic tables and analyze the data if conclusions are not comprehensive.

3. Whether all qualitative data being used to support and specify conclusions have been drawn from the tables

Once the review is completed, do the following tasks:
1. State the final conclusions in relation to each objective
2. Select supportive tables to appear in the text of the report

Compile the conclusions and tables relating to each specific objective. You are now ready to draft the report.

1.6.1. Writing the Report

Remember that your main aim of writing the report is to communicate your findings to the reader in a simple, logical but sequential manner. Therefore, avoid confusing and distracting the reader.
When writing the report, it is important to consider:

- The content
- The style of writing
- The layout of the report
- First draft
- Second draft
- Finalizing the report

1.6.2. Main Components of a Research Report

- Title or Cover page
- Summary of findings and recommendations (abstract)
- Acknowledgement
- Table of contents
- List of tables, figures and appendices
- List of abbreviations

1. Introduction
2. Literature review
3. Objectives
4. Methodology
5. Findings and conclusions
6. Discussion of findings
7. Recommendations
8. References
9. Annexes (data collection tools, letters etc.)

1.6.3 Dissemination of results

Dissemination of results entails the measure that would be undertaken to communicate the study to others. Explain how, where and to whom findings would be communicated to. For example, make copies of the study document and send to policy makers or people in authority who influence decision making. A copy should be put in the school library while another copy should be sent to the General Nursing Council as part of your final examination in research. A formal meeting should be organised with the school management, fellow students and with some organizations interested in your study to share your findings. You may use conferences, workshops, newspapers, magazines and radios to disseminate your findings to the general public.

Conclusion

The conclusion should relate directly to the research questions or objectives. It should represent the contribution to the knowledge base and also relate directly to the significance of the study, which is always, in some way, to improve the human condition.

Recommendations

These could be to the school authorities or community leaders. This section should be kept brief.

These can take two forms: recommendations for further study, or recommendations for change, or both. Each recommendation should trace directly to a conclusion.

Limitations of the study

The limitations of the study are those characteristics of design or methodology that impacted or influenced the interpretation of the findings from your research. They are the constraints on generalizability, applications to practice, and/or utility of findings that are the result of the ways in which you initially chose to design the study and/or the method used to establish internal and external validity.

Importance of stating limitations

Always acknowledge a study's limitations. It is far better for you to identify and acknowledge your study's limitations than to have them pointed out by your professor and be graded down because you appear to have ignored them.

Keep in mind that acknowledgement of a study's limitations is an opportunity to make suggestions for further research. If you do connect your study's limitations to suggestions for further research, be sure to explain the ways in which these unanswered questions may become more focused because of your study.

Acknowledgement of a study's limitations also provides you with an opportunity to demonstrate that you have thought critically about the research problem, understood the relevant literature published about it, and correctly assessed the methods chosen for studying the problem. A key objective of the research process is not only discovering new knowledge but to also confront assumptions and explore what we don't know.

Claiming limitations is a subjective process because you must evaluate the impact of those limitations. Do not just list key weaknesses and the magnitude of a study's limitations. To do so diminishes the validity of your research because it leaves the reader wondering whether, or in what ways, limitation(s) in your study may have impacted the results and conclusions. Limitations require a critical, overall appraisal and interpretation of their impact. You should answer the question: do these problems with errors, methods, validity, etc. eventually matter and, if so, to what extent?

1.7 Suggestion for further readings

Burns, N., and Grove, S.,K. (2005). **The Practice of Nursing Research: Conduct, Critique and Utilization,** 5th Edition, Elsevier Saunders, USA.

Clark J. M, Hockey L. (1981) **Research for Nursing: A Guide for the Enquiring Nurse.** H M + M Publishers, London.

Neuman, L. (1997) **Social Research Methods in Qualitative and Quantitative Approaches,** Allyn and Bacon Company.

Polit F, Hungler B. P. (1999) **Nursing Research: Principles and Methods**, 6th Edition. Lippincott, New York.

Polit, D.,F, and Beck, C.,T, (2008). **Nursing Research: Generating and Assessing Evidence for Nursing Practice,** 8th edition, Lippincott Company, Philadelphia, USA

Russell, B. H. (2002) Social Research Methods; Qualitative and Quantitative Approaches. Thousand Oaks.

Varkeuisser C. M. *et al* (2003) **Designing and Conducting Health Systems Research Projects.** Volume 2, Part 2: Data Analysis and Report Writing – WHO

Varkevisser C. M. *et al* (2003) **Designing and Conducting Health Systems Research Projects.** Volume 2, Part 1: Proposal Development and Fieldwork rimske –WHO

Wood G. L, Haber J. (2006) **Nursing Research: Methods and Critical Appraisal for Evidence-Based Practice,** 6th Edition. Mosby Elsevier, USA

ANNEX 1: PROPOSAL DEVELOPMENT

FORMAT FOR RESEARCH PROPOSAL

CHAPTER 1

. INTRODUCTION

1.1. Background Information

1.2. Statement of the Problem

1.3. Problem Analysis and problem analysis diagram

1.4. Justification

1.5. Research Objectives

- 1.5.1. General Objective
- 1.5.2. Specific Objectives

1.6. Hypotheses

1.7. Conceptual Definition of Terms

1.8. Operational Definition of Terms

1.9. Variables

CHAPTER 2 - LITERATURE REVIEW

2.1. Introduction

2.2. Overview of Condition

- Global Perspective
- Regional Perspective
- National Perspective

2.3 Conclusion

CHAPTER 3 – RESEARCH METHODOLOGY

3.1. Introduction3.2 Research design

3.3 Research Setting

3.4 Study Population

3.5 Sample Selection

3.6 Sample Size

3.7 Data collection tool

3.8 Data collection techniques

3.9 Sampling

3.10 Pre-test/Pilot study

3.11 Ethical and cultural considerations

3.12 Plan for data processing and analysis

3.13 Plan for dissemination of findings

ANNEX 2: WORK PLAN

Table 10: Example of Work Plan

TASK	DATE	PERSONNEL
Finalize data collection tool	Week 1	Research team
Finalize research proposal	Week 2	Research team
Seek permission from relevant authorities	Week 3	Team leader
Print out questionnaires	Week 4	Research team
Carry out pre-test	Week 5	Research team
Make adjustments to methodology	Week 5-6	Research team
Data collection	Week 7-8	Research team
Data analysis	Week 9-11	Research team Statistician
Report writing	Week 12-13	Research team
Submission of complete report	Week 14	Team leader
Dissemination of results	Week 15	Research team

ANNEX 3: GANTT CHART

Table 11: Example of Gantt Chart

Task	Personnel	March	April	May	June	July	August	September	October	November	December
Finalize data collection tool	Research team										
Finalize research proposal	Research team										
Seek permission from relevant authorities	Team leader										
Print out questionnaires	Research team										
Carry out pre-test	Research team										
Make adjustments to methodology	Research team										
Data collection	Research team										
Data analysis	Research team Statistician										
Report writing	Research team										
Submission of complete report	Team leader										

Dissemination of results	Research team																																								

Annex 4: Consent Form
Example of the Written Consent Form

Dear Participant,

I am a third year Student Nurse from Lusaka School of Nursing in Lusaka. I am carrying out a study on knowledge, attitude and practice in relation to sexual behaviour among adolescents in Lusaka.

This study is being conducted in partial fulfilment of the Diploma in Registered Nursing. However, the information resulting from this study will help in designing appropriate information, education and communication strategies for behaviour change among adolescents. There are no direct benefits for the participant. The study is not sponsored by any organization.

You are among the one hundred adolescents who will be interviewed. You will be asked personal questions, some of which may be sensitive and private. Your selection to participate in this study is based on lottery method.

Please be informed that:

1. Participation is on voluntary basis
2. You are free to withdraw at any stage during the interview
3. Your withdrawal will not in any way affect your care
4. All information obtained from you will be kept confidential

Should you have need for further information, questions, comments, complaints or queries, please do not hesitate to contact the following persons on the cell/addresses below:

1. The Principal Tutor
   Lusaka School of Nursing
   P.O. Box 50366
   LUSAKA
   Cell: 260-1-977154280

I accept participation

Signature or thumbprint (Participant) _____
Date_____

Signature of data collector_____
Date_____

Annex 5: Report Writing

RESEARCH REPORT WRITING (Guidelines)

COVER PAGE

A STUDY TO ESTABLISH PREVALENCE OF HYPERTENSION AMONG PERSONS AGED 15 TO 45 YEARS IN LUSAKA ZAMBIA

BY

LIYUNGU SIKUKELA

MUBANGA GERALD

HAMUDUDU WEST

BANDA DRIVER

A research report submitted to General Nursing Council in partial fulfilment of the requirements for award of Diploma in Registered Nursing

Lusaka School of Nursing

University Teaching Hospital

P.O. Box 50366

LUSAKA

TABLE OF CONTENT

ACKNOWLEDGEMENT

Example

The authors of this research report wish to express their sincere appreciation for the assistance rendered to them by various persons and organization listed below.

The UTH management for allowing us to collect data at the University Teaching

Hospital

Home Based Care stuff at the University Teaching Hospital for allowing us to use their premises and facilities for data collection

Mrs. K. Kanchomba for allowing us to use her computer for typing our report.

Special thanks also goes to the teaching staff of Lusaka School of Nursing for their tireless supervision of our research project.

Last but not the least our sincere thanks to our participants for sparing their precious time to participate in the research.

DECLARATION

The under-listed hereby solemnly declare that this research represents our own work and that it has not previously been submitted for any Diploma in Nursing at Lusaka School of Nursing or other Registered Nursing programme.

Name	Signature
1. Liyungu Sikukela	……
2. Mubanga Kasabi	……
3. Hamududu West	……
4. Banda Driver	……

Date……

I have read this report and have approved it for examination

Supervisor's name
……

Signature…….. Date……

STATEMENT

We hereby certify that this study is entirely the result of our own independent investigations. The various sources to which we are indebted are clearly indicated in the text and reference.

Signature	Date
1. ……..	……
2. ……..	……
3. ……..	……
4. ……..	……

DEDICATION

This work is dedicated to all the members of the public.

ABSTRACT

Hypertension is one of the silent killer diseases whose importance is largely undermined by many sectors of society.

The main objective of this study was to establish the prevalence of hypertension among persons aged 15 to 45 years of age in Lusaka District.

A cross-sectional descriptive study was conducted in the residential areas and work places in Lusaka District. Residential areas, occupation, income, age, sex, life styles, family history of hypertension and educational status were among the variables

considered. Five hundred (500) participants were interviewed followed by three consecutive blood pressure checks with thirty (30) minutes period between check per participant. Convenient sampling method was used. Data processing and analysis was done manually using frequency tables and cross tabulations after creating a data master sheet.

The study revealed that eighty (80%) percent of the participants had raised blood pressure on all the three readings, 60% of whom were aged 35 to 45 years. Raised blood pressure was also associated with positive family history of hypertension, sedentary life styles and being highly educated. Place of residence, occupation, income, and sex were not associated with hypertension. Only five (5%) percent of the participants had regular blood pressure check-ups.

It is recommended that persons above 30 years of age should make it a habit to have regular blood pressure check-ups. To facilitate this, health care facilities should accommodate persons wishing to have their blood pressure checked free of charge. For those persons who can afford to purchase digital blood pressure machines, they should do so and check their blood pressure regularly.

PLEASE NOTE THAT:

1. The above is a specimen (a guide) to the contents of a research report. Do not copy it exactly into your report.
2. The corrected proposal is part of your research report. In the methodology, change the tense from future tense to the past tense since it is no longer a plan, you have already carried out your study. If certain parts of your proposal were changed during the implementation, state the changes and the constraints that you encountered.
3. All the appendices that you attached in your proposal should still be attached to your report.
4. Do not duplicate your analysis in your discussion of findings.
5. In the analysis, your opinions are not needed. Just write the results as they are.
6. In the discussion, you can include your opinions, implications, and make comparisons or support of findings with the results of other studies or theories that appear in your literature review.