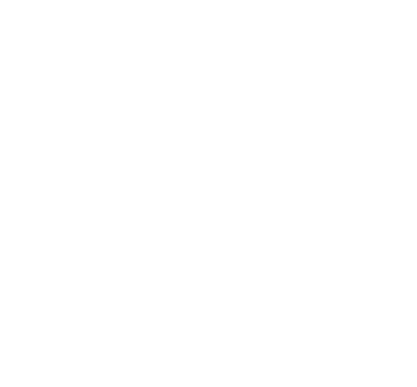
**UNIT**

**3**

**Writing a Literature Review Defining a research problem Developing research questions, aim, objectives and purpose**

**Un**



### Introduction

Unit 1 introduced the scope and characteristics of research in Public Health. Unit 2 covered research approaches, designs and methods. In Unit 3, we begin with guidance on writing a literature review.. This will assist you in writing Assignment 2, Part A. In Unit 3, sessions 4 and 5, we will suggest ways to explore a research problem in Public Health, develop research question, an aim, objectives and a purpose for your proposed study. We will also ask you draw on the previous module to specify what study design you propose using, what other study designs you may consider and why you view your proposed design as the best.

With a research problem tentatively in mind, it is first worth critically investigating whether other people have also examined a similar research problem and what they have found and contributed. To do this you need to review the literature in the field. At your your level of study, you are expected to be able conduct a thorough and critical review of the literature relating to your topic. The aim of Unit 3, sessions 1-3 is to give you the knowledge and skills to gather and critically appraise information related to your research problem. Critical appraisal is important as this enables you to weigh up the value of different studies conducted, but it is not easy and we will only ask you to practice this with some readings.

### Study Sessions

Study Session 1: Why do a Literature Review.

Study Session 2: Planning aLiterature Review: How to search for Literature.

Study Session 3: Writing a Literature Review.: What is relevant and critically evaluating

articles

Study Session 4: Drafting a research problem and questions

Study Session 5: Formulating aims, objectives and a study purpose. Study Session 6: Session summary

# Unit 3 - Session 1

Planning a Literature Review

### 1 Introduction

This study session will explore the purpose of conducting a literature review and outline some key questions to assist you in planning your literature review. In our experience, identifying relevant studies and articles related to the research topic is one of the most challenging parts of the research process for new researchers, but essential to know the field and prepare for your mini-dissertation proposal.

It is important that you from the outset identify the stages in completing the literature review, and write dates into the schedule.

Also identify the actions you plan to take and the deadlines you plan to meet. You could wait until later to clarify the actions to be taken. They will become clearer after you have done an initial review of the literature, and clarified a framework for your review.

#### Session Contents

1 Learning outcomes of this session 2 Readings

3 The purpose of conducting a literature review 4 Planning your literature review

5 Searching for relevant literature: how to narrow down and how to read critically 6 Session summary

#### Timing

There are three readings and three tasks in this session. It should not take you more than three hours.

#### Learning outcomes

By the end of this session, you should be better able to meet the intended learning outcomes in the first column; they are part of or relate to the overall Module Outcome/s in the second column:

|  |  |
| --- | --- |
| **Session Outcomes** | **Module Outcomes** |
| * Know why you are conducting a literature review. * Identify the steps necessary for conducting a literature review. * Know how to search for literature * Formulate a review question. * Develop a search strategy for identifying relevant literature * Know how to further narrow down literature you have found to that relevant to you area of interest * Know how to use articles to either support or show where there are gaps with respect to your research area. * Know how to structure a literature review so that there is a logical flow to your presentation. * Begin to be able to compare different articles and see whether the evidence is valid and quality data and where there are flaws.   • | * Have knowledge of relevant literature in your field * Be competent in writing a well- structured, insighful literaturereview * To begin to be able to critically review literature on the study topic |

### 2 Readings

There are four essential readings for this session. These are all on iKamva. Some of them are presentations that are short.

|  |
| --- |
| 1. Thomson P. *Introduction to journal articles*. University of Nottingham. |
| 2. Thomson P. *What literatures should I read? how do I find them?* University of Nottingham. *(Open source.* |
| 3. Thomson P. *Making sense of literatures - working with small groups of papers*. University of Nottingham.*).* |
| 4. Volmink, J. (2007). Ch 6 – Literature review. In Epidemiology: A Research Manual for South Africa. Cape Town: Oxford University Press: 66 – 76. |
| 5. Alexander L. *Some Strategies for Writing a Literature Review.* SoPH, 2010. Slides 6-8. |
| 6. University of Bradford Schoolf of Management. *Writing strategies*. University of Bradford |
| 7. University of Bradford. The Challenges of referencing. University of Bradford. |

#### 2. 1 Extra if you have time

Dane, F.C. (1990). Ch 4 - Reviewing the Literature. In Research Methods. California, Pacific Grove: Brooks/Cole: 65 -78. [on iKamva]

#### 3 The purpose of conducting a literature review

This section will explore some of the reasons why it is important to conduct a comprehensive and systematic review of other studies related to your research area. You will need to conduct a literature review before deciding upon the final research question and which study design and data collection methods to use. Why you should do a literature review – what value is there for your research? It gives you good guidance on how to write an introduction; How to search for literature: This is towards being able to write a literature review for your mni-thesis proposal and when you write up your thesis.

##### Study these readings and then try Task 1.

**READINGS**

1. Thomson P. *Introduction to journal articles*. University of Nottingham.*.*
2. Alexander L. *Some Strategies for Writing a Literature Review.* SoPH, 2010. Especially, slides 6-8.
3. Thomson P. *What literatures should I read? how do I find them?* University of Nottingham.*.*
4. Thomson P. *Making sense of literatures - working with small groups of papers*. University of Nottingham.*.*

**TASK 1 –Think about the purpose of a literature review**

Think about why it is necessary to conduct a literature review? What will you learn for the study you are wanting to do? Conducting a comprehensive literature review is both labour-intensive and time consuming. It is however an integral part of the research process. Consider what the purpose and function of a literature review would be as you:

1. Start your study – think about your aims and objectives.
2. Collect and analyse your data – go back to your literature review and track what insights it gives you

– what confirms or disagrees with your finding; where are the gaps that you are filling in with your data.

1. Write up the findings and interpretations from your study. – Once again, do what you have done in 2 and see what confirms or is contrary to your findings; go back and see how you would critically appraise the studies now that you have done your own research.

##### FEEDBACK

**What is the value of reading literature?**

1. **When you start your study:**
   * To clarify concepts.
   * To review the state of knowledge on the topic.
   * To understand the problem better.
   * To identify gaps in the knowledge.
   * To narrow down what is relevant and not present ‘everything under the sun’ in a broad area. Treat literature like you are putting it through a funnel: read widely but only capture at the end, what is truly relevant to your study.

**Wide reading of literature relevant to your topic and proposed research question/s (*See once again the presentation by Alexander, L, Slides 9-14)***

##### Figure 1



**Only write up at the end what literature is truly relevant to your focus but keep notes of everything you have read. Re-read it when you are finished your study and have written up your study, to refine the literature review section.**

* + To avoid duplication and avoid limitations.
  + To; pay attention to structure – a logical flow; academic language, correct referencing.
  + To assess whether it is worth doing the study and refine the rationale for your study.
  + To define the boundaries of your study.
  + To develop or refine your own methods.
  + To identify what relevant theory has been developed.
  + To understand how others have seen the problem.
  + To compare past findings with the current situation and setting.

##### As you collect and analyse your data:

* + To understand the problem better.
  + To make comparisons of your data with that of other researchers.
  + To consider how the problem has been tackled in other settings.
  + To identify trends in studies and their findings, and for quality control of fieldwork conducted.
  + To continue to pay attention to structure – a logical flow; academic language, correct referencing. Academic language is important. It is not a case of this being the way a first language speaker talks. Academic language is different for the way we talk in

conversation and everyone whether a first language speaker or not needs to master this for tertiary education.

* + To reassess how you are doing your study and what others have done well or not

well and what gaps.as you go along

1. **As you write up your study:**
   * Make sure you make it clear right at the beginning as part of your introduction what you are going to focus on. Do this to draw the reader in right from the start.
   * To locate your study in the context of the field of knowledge.
   * To mention where there are gaps in the field of knowledge so that you can motivate why your study is needed.
   * To build on evidence provided by previous studies.
   * To harness some of the authority of other studies but to also appraise them and be able to say what is a good study and what isn’t or what are good parts of a study and not. (See exercise in the PowerPoint presentation titled: Thomson P. *Making sense of literatures - working with small groups of papers.* However, don’t worry too much in this course in mastering a critical appraisal. You will learn to do this over time. It is important at this stage that you show that you understand what other studies are saying.
   * To show the relationship of your findings to that of other studies.
   * To demonstrate how similar or different are your findings.
   * To discuss whether your findings complement other studies

It is fine it they do any of these things. You can say for example: Like study x our study found….” Or “ Contrary to study y, our study found..” You can then discuss in your discussion section why you think the results differed: for e.g. different methods; different contexts; different populations; different parts of the world etc.

* To link your findings with existing theory. You can also do this in your initial reading of literature, to see if there is a theory, framework or model you may want to use.
  + To consider past recommendations.
  + It will be important to go **back** to your literature review when you have finished your study and have written it up, to revise it and see what is still relevant, what you want to comment on in your discussion section and so forth. It is important to go back to your research question/s from which you will develop your aim and objectives and see that what you have captured fits in with these.

##### What if I can’t find much literature on my topic?

* If you can’t find literature exactly on your topic on your topic but not from your region or country etc. don’t immediately abandon the idea of focusing on this. This may be a reason to do your study, to see what has been found elsewhere but to point out that this may be different to other contexts and that is why research needs to be done in this area, region or country. You still need to review whatever literature you can find thoroughly to reach this conclusion and be knowledgeable and convincing in making this point.

### Planning your literature review

This section outlines the steps in planning your literature review and in systematically identifying and collecting studies and articles that are relevant for your literature review.

**READING**

1. Re-read the powerpoints mentioned above and read:
2. Volmink, J. (2007). Ch 6 – Literature review. In *Epidemiology: A Research Manual for South Africa*. Cape Town: Oxford University Press: 66 – 76. [on iKamva]

Volmink (2007) advocates the use of systematic reviews rather than traditional (literature) reviews to reduce bias due to systematic errors as well as random errors. In table 6.2 he lists a number of systematic errors that can arise from ‘traditional’ reviews and warn that these can lead to false conclusions being drawn about the state of evidence on the particular topic. In describing the steps involved in conducting a systematic review (see Table 3), it is clear that, though conducting a systematic review - which is considered a research project on its own merit – is not always feasible or even advisable, following some of the steps involved in doing a systematic review can serve as a valuable guide to improve your literature review. You will not get to do this in detials as part of the tasks in the course, but you may want to do this for your mini-dissertation. Note: that this is different from what you may have heard of as a ‘Cochrane systematic review’. This latter is a very specific method of doing a systematic review that we will not cover here.

**TASK 2 – Starting to plan the literature review process**

Write down some key questions that should be explored before you start a literature review. This can be related to doing any literature review. You can also in a introductory way, think about specific types of literature reviews such as systematic reviews. Systematic reviews can be done with quantitative or qualitative literature, but they will differ in some respects.

Then brainstorm key words and synonyms for this topic, so that you will locate a wide range of publications on the topic. In searching, try to gain an overview of the problem, to

identify previous research on it, and to identify studies in comparable contexts. Read abstracts first to see if the literature is relevant to your topic.

##### FEEDBACK

Here are some questions suggested by Volmink (2007) that you will need to ask yourself when conducting your literature review (even though it may not be a systematic review):

* 1. *What question(s) will my review address?*

You may find that your initial questions are broad and possibly vague, which is arises from the facdt that you don’t yet have adequate knowledge about the study topic. Do not be overly concerned about this. Make meticulous notes of your review questions as you proceed. You will find that your questions will become more refined and focused as you become more knowledgeable about your study topic. This is a truly exciting period as you will experience much learning. Well done, these are your first steps to becoming a true researcher!

* 1. *What criteria will I use to determine study eligibility?*

How will I decide on whether the published study should be included in my review

or not? Think about this a systematic review. It forms part of narrowing down your literature and to focus on your specific topic and to assess the quality of the studies you include.

* 1. *How will I identify relevant studies?*

Where will I look for literature? What sources will I search? What resources are available to me? See powerpoint presentations and guidance in your module guide and the programme handbook.

* 1. *How will I appraise included studies for validity?*

You will want to make sure that the studies that you review is **relevant** to the topic of study, and will move your proposal forward (i.e. support the idea of the research that you propose/provide insights for your study ). Further, you want to give preference to studies that have greater credibility in terms of their findings due to the methodologies that were used i.e. that the evidence they provide is rigorous. This will be covered in detail in the next session.

* 1. *How will I synthesise the findings from and across various studies?*

It is important to draw conclusions based on results from several studies as this will give you an indication of the consistency of the information (that is, if there are great variations across different settings). To do this, you need to make sure that the information that you extract from various studies are done systematically to aid you in making comparisons. This will be covered in the final session on writing the literature review.

### Searching for relevant literature

**READINGS**

**1. Alexander, L. *Some Strategies for Writing a Literature Review.* SoPH, 2010. Especially, slides 9 and**

**10. (*On ikamva)***

1. **Tyndall, J. (2008). Databases for Research in Health. Flinders University. *(On iKamva)***

It is important that you search for the most updated literature you can find. While good structure and academic writing is important, no amount of eloquent writing and discussion can make up for a literature review that does not review quality (relevant and most recent or up-to-date) literature. You can consider published research to be the building blocks (or bricks) for your literature review. How you synthesise and link these studies, is the cement that bonds the bricks to form a strong and stable structure (your literature review). We will deal with this later in this unit. For now, how do you find relevant literature?

To find relevant literature you need to:

* 1. Formulate a research question so that you know what to look for; and then move on to
  2. Knowing where to look.

That means that you have to develop a **search strategy**.

**TASK 3** – **Developing a search strategy**

Use the ‘Particpants, Intervention, Outcomes and Context’ (‘PICO’) method in constructing your review questions, and use this as a starting point to develop a search strategy. From your research question identify the target population (**P**articipants), the **I**ntervention and (an) **O**utcome(s). Unless you research question involves an intervention (i.e. proposing an evaluation or effectiveness study), your review question will not include a **C**ontrol. You can adapt the PICO method, and use the C for **C**ontext. Go over particularly the powerpoint ‘:**Thomson P. what literatures should I read? how do I find them?’** and also guidance you have received in searching for literature in previous tasks, this module and how to access sites via UWC library portals. Speak to your fellow students to compare notes on how to do this.

##### FEEDBACK

This was most probably a very difficult task. Don’t despair. Here is an example. Let’s say

your research question is related to “Factors that influence adherence to antiretroviral treatment among adolescents”?

Applying the PICO method will lead to something like this: Participants = **adolescent**

Intervention = **antiretroviral treatment**

Outcome = **adherence**

Context = **South Africa** (or some salient characteristic about the research setting of interest to you)

Search strategy = [adolescent] + [antiretroviral treatment] + [adherence] + [South Africa] You may have noticed that we have placed the search terms in brackets above. Depending

on which search engine you use, you may want to expand these individual terms to make

your search more sensitive. For example, you may want to expand the term “adolescent” to

include (pick up) literature that denotes them as “young adult”, “youth”, “teenager”, even “child or children”. By adding synonyms and like terms to your search words, you increase the sensitivity of your search strategy, and will thus be able to get more ‘hits’ on potentially eligible studies.

Be aware that you must plan a couple of days of dedicated time on the Internet **and use the academic databases provided by the UWC library** or other electronic academic databases (e.g. Google Scholar) to which you have access. It is also helpful to show your plan to colleagues who are familiar with the topic area, as they may have suggestions of where to look for literature. Remember that literature means print and electronic journals, books, research reports, theses and dissertations and much more. Your ‘first prize’ would be to find recent, relevant studies that have been published in reputable scientific journals that have been peer-reviewed.

If you are able to visit UWC, make an appointment to meet the Faculty Librarian to discuss your literature review. You may want to impress her by presenting your search strategy to her/him, and ask her/him to direct you to useful databases and/or suggest search engines. If you are not able to visit then make email contact with the library via the MPH Administrators to obtain information.

##### What should I do if my internet is sometimes unreliable?

* + - If you are having difficulties with the internet, let your course administrator know, so that she can make the convenor/lecturers aware of this.
    - Do a thorough search first but if you find you can’t access an article
    - Another good ideas is early in your course to register on a website called ‘Researchgate’. You can call up the names of authors you know of and if their articles aren’t uploaded ask them to send you a copy. You can also ask to ‘follow’

the authors who work in a field similar to your area of interest. You will then get notifications from Researchgate when new articles are published. You can always also go back on to ‘Researchgate’ and check for uploads or mention of articles on an area of interest to you. The Researchgate website will ask you for your institutional affiliation and a few other questions when you register, which can be UWC. It will also ask you for areas of interest to you. You will need to give an email address which can be your uwc student email address or another one of your choice.

### Session summary

You are now in a good position to start a thorough examination of the literature. Part of this should include a critical appraisal of the work of other researchers, but you should not worry too much if you don’t become expert at this. The main things is to know are:

* + Why is a literature review important – how does it make you knowledgeable about the field of interest to you and how does it help you in developing a research question and identifying gaps in knowledge
  + How to plan to search for literature of relevance; go over your module, notes
  + Practically, what search engines and sites are best to use to search for literature of interest: Including re-acquainting yourself with the best and most reliable search engines, Google Scholar and Researchgate, to become familiar with this.
  + Successfully acquire the literature.
  + Read widely but be discerning in what you capture ultimately in writing – this should be relevant to your topic of interest.
  + Make sure you keep notes as you read and keep track of the author, name of article/chapter, date, page number and any other relevant details for referencing (including websites and dates you accessed them). It will be very terribly time- consuming and annoying to you to later have to try and check where you found something.
  + Check referencing styles in-text and at the end under the title ‘References’ so that you become familiar with how to reference correctly. Make sure that if you quote a piece of text, it has quotation marks and the page number where it appears (in addition to other information needed on the reference). If you reword (paraphrase) what has been said but the idea comes from the literature, you still need to reference it correctly with the page number. You only don’t need to do this if the idea is entirely your own.
  + Make sure you write a literature review with a good structure and good academic language – which is different to how we speak in ordinary conversation.
  + A good structure includes and introductory section that draws the reader in to why this area of study is of interest and important, shows you are knowledgeable about the literature; shows that you know how to narrow the literature down to what is relevant to your proposed study and not include ‘everything under the sun’ related to the broad topic area; shows that you can move from general literature findings to specific areas directly related to your country, region etc.; make sure that you tell the reader enough about the study for them to understand why you are writing about it (how many studies there were; where they took place, when, how big the sample/s was/were, what methods were used and what it/they found) and how this links or is relevant to your study, rather than making broad statements; shows that you are able to in an introductory way tell the difference between the quality of different studies, especially methodologically – what is sound and what may not be; that you are able to competently and consistently reference in-text and at the end (this must be checked and uniform throughout) and are able to put things into your

own words as much as possible rather than quote a lot, but are able to credit the ideas correctly.

* + In the next study session you will be provided with ways to read a journal article and a basic introduction to being able to assess the worthiness of evidence from the literature – being able to do conduct a critical review. This will help you later, when you do your study and you want to compare and contrast what you found and others found, comment on your ideas why they may be different and use the literature to build you own case from your results.

Unit 3 - Session 2

Reading and beginning to appraise the Literature

### 1 Introduction

Now that you have considered the process of identifying and collecting relevant literature, you need also to develop the ability to read and review the literature critically. In the Descriptive Epidemiology module, we included a session on critically evaluating quantitative studies. We recommend that you review those sessions in the module thoroughly. In this study session, we will concentrate on providing you with further skills to critically appraise qualitative research studies.

#### Session Contents

1 Learning outcomes of this session 2 Readings

1. Reading for comprehension/understanding the topic area and becoming knowledgable
2. Reading for relevance
3. Critical appraisal/evaluation of a research study
4. Revising critical appraisal of quantitative research 5 Critical appraisal of qualitative research
5. Session summary

#### Timing

There are seven important readings in this session. It will be worth your while to spend time on the tasks which help you to engage with these readings. It could take you up to five hours to complete.

#### Learning outcomes

By the end of this session, you should be better able to meet the intended learning outcomes in the first column; they are part of or relate to the overall Module Outcome/s in the second column:

|  |  |
| --- | --- |
| **Session Outcomes** | **Module Outcomes** |
| * Extract key, relevant information from published studies. * Identify basic key criteria for judging the value of a research study, especially its method rigour. * Be able to do a critical appraisal of literature, at a basic level. * Be able to Identify some of the same but also the the different criteria for assessing quality in quantitative and qualitative research. * Critique a piece of qualitative research. | * Undertake a basic critical literature review on the study topic so that you are able to see whether it is of value or not to your study. |

### 2 Readings

##### Go over the powerpoint presentation readings from Unit 3, session 1. In addition, read the following articles (all are on iKamva).

|  |
| --- |
| Depoy, E. & Gitlin,L.(1994). Ch 5 - Developing A Knowledge Base through Review of the Literature. In  *Introduction to Research*. St Louis: Mosby: 61 - 76. |
| Rosenberg, B.(undated). How to read an academic article. Available from:  <http://faculty.washington.edu/davidgs/ReadArticle.html> |
| University of Canberra (undated).Critical thinking. Available from:  <http://www.canberra.edu.au/studyskills/learning/reading> |
| Marshall, C. & Rossman, G. B. (1995). Ch 5 - Defending the Value and Logic of Qualitative Research. In  *Designing Qualitative Research.* Newbury Park: Sage Publications: 144 - 153. |
| Mays, N. & Pope,C. (2000). Assessing Quality in Qualitative Research. *British Medical Journal*. 320(1): 50  - 52. |
| Van der Riet, M & Durrheim, K. (2006). Ch 5 - Putting Design into Practice: Writing and Evaluating Research Proposals*.* In Terre Blanche, M. & Durrheim, K. (eds): 80 - 111. Cape Town: UCT Press |
| Morton, H.,Santich, B. & Worsley, A.(1996). Mothers’ Perception on the Eating Habits of Two  Year Olds: A Pilot Study. *Australian Journal of Nutrition and Dietetics*. 53 (3): 100 - 105. *(An example of quantitative research).* |
| Ncube, N., Meintjes, W.A. and Chola, L., 2014. Knowledge and attitudes of non-occupational HIV post- exposure prophylaxis amongst first-and second-year medical students at Stellenbosch University in South Africa. *African Journal of Primary Health Care & Family Medicine. 6 (*1):1-9. *(An example of quantitative research).* |

1. **Reading an academic article**

Reading academic articles can be difficult - even for students at postgraduate level!? The good news is that if you add skill together with the practice of (much) reading, you can improve your ability to read with comprehension. Here are three rules for reading adapted from University of Canberra Academic Skills Centre:

Rule # 1:

Never read without specific questions you want the text to answer. If you want your

reading to stay in your memory, you must approach your text with a list of questions about the particular information you want, and search the text for the answers to those questions. Don't just read with the hope that an answer will appear.

Rule #2:

Never start reading at page 1, expecting to read the whole text. If there is a summary,

a conclusion, a set of sub-headings or an abstract, read that first because it will give you a map of what the text contains. This will give you an idea whether to read further, depending on whether it is relevant to your enquiry or not. If you decide it is relevant, you can then deal with the text structurally, looking for particular points, not just reading ‘‘blind'' and easily getting lost. Always keep in mind what you need and what is relevant to the question you are asking the text.

Rule #3:

Think critically as you read. In reading academic texts you need to develop a

personal (but nevertheless academic and rational) response to the article/ theory/ chapter through:

* 1. developing an understanding of the content and
  2. evaluating and critiquing the article.
  3. deciding whether the study was a worthwhile one methodologically or not.

**To summarise the rules above** - before reading a text closely, read the introduction or abstract and skim read the text to give you a preliminary idea of what it is about. Then read it closely and critically. It is hard to read every word, as there is a lot of reading to do. Try and train yourself to read quicker by ‘scanning’/running over the page with your eyes to see what the general idea is and then you can mark the main ideas with a highlighter and/or make notes.

Dr Rosenberg from University of Washington’s Teaching and Learning Center suggests that students learn the skill of applying the following two steps in reading an academic article to accelerate comprehension:

Step 1. Find the Claim:

1. What question does the author pose?
   * This typically is implied rather than stated explicitly, so you might be searching for something that is not literally in the text.
2. Thesis/position/argument/claim
   * What is the primary argument made by the author?
3. Context
   * Why is the argument significant?
   * What other positions does the author indicate are debated regarding the topic?
   * When was the article written? Where was it published? Who was the intended audience?

Step 2. Assess the strength/validity of the argument by considering the following:

1. Evidence
   * What evidence does the author offer in support of the position put forward?
   * What is the nature of each piece of supporting evidence? For example, is it based on empirical research, ethical consideration, common knowledge,

anecdote?

* + How convincing is the evidence? For example, does the research design adequately address the question posed (#1 above)? Are the ethical considerations adequately explored and assessed? Have you read or heard anything on this subject that confirms or challenges the evidence?

1. Counter arguments
   * Were any arguments made in opposition to the author's views?
   * Were these counter-arguments persuasively made (refuted)?
   * What evidence was used in the refutations?

### Critical appraisal of a research study

Part of your role as a Public Health researcher and as an academic in general is to consider the value of other peoples’ studies critically. This is important in your studies and also in your practical work to see if the findings are worth taking note of and following. In other words, you cannot accept what is written and published at face value: you must now examine it for scientific rigour.

This section is aimed at alerting you to some of the issues that you should focus on when appraising research studies, for example, whether the research methodology is appropriate to the research question. We will therefore outline some general questions that you should ask yourself when reading any piece of research. We then explore some of the differences between critically assessing qualitative and quantitative research.

**READING**

Depoy, E. & Gitlin, L. (1994). Ch 5 - Developing a Knowledge Base through Review of the Literature. In

*Introduction to Research.* St Louis: Mosby: 73 - 76. [on iKamva]

The first reading introduces some of the key criteria and questions that you should ask when considering a piece of research..

**READINGS**

Marshall, C. & Rossman, G. B. (1995). Ch 5 - Defending the Value and Logic of Qualitative Research. In

*Designing Qualitative Research.* Newbury Park: Sage Publications: 144 - 153.

Van der Riet, M & Durrheim, K. (2006). Ch 5 - Putting Design into Practice: Writing and Evaluating Research Proposals*.* In Terre Blanche, M. & Durrheim, K. (eds): 80 - 111. Cape Town: UCT Press

We learn best by doing. So take the following two articles and draw up a chart like the one below.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Title | What it the  topic about |  | **Argument** | **Evidence** | **Claims** | **Adequacy** |
| **1)** |  |  |  |  |  |  |
| **2)** |  |  |  |  |  |  |
| **3)** |  |  |  |  |  |  |

##### TASK 1 – Critical appraisal of articles

1. ***Compare and evaluate (appraise) articles***

**Take the two articles supplied to you: Morton (1996)** *(example of qualitative research)* **and Ncube *et al*. (2014)** *(example of quantitative research)* **then for each one note:**

##### definition of x ( the topic you are reading about)

* + **what kind/aspect of x is spoken about in this article?**
  + **what is the argument? ( 4 sentences)**
  + **using what evidence?**
  + **what claims are made?**
  + **how adequate is this?**

**Now make a table like the one above and add this information about each article.**

1. ***Compare and contrast***

**Look at your table and decide:**

* + **what do these four texts have in common? (using the comparative criteria from the table)**
  + **what are the points of difference (contrast)? (note - this is not yet an argument)**

1. *Blank and blind spots*

##### Relook at your table and the section about inadequacies – were they blank or blind spots?

* + **blind spots – something the method, definitions or theoretical approach does not allow to be seen/said**
  + **blank spots – things that are not yet ‘filled in’ by this study**

1. ***WRITE: a sentence skeleton***
   * **write an opening statement about the topic x and why it is important/interesting/puzzling and to whom, why and where**
   * **I have analysed four articles which address (x). They share (one or two important things).**
   * **While all of the authors are in agreement that …… there are also important differences. These begin with variations in sample/method/place. (1) is…. (2)… ((3) is…)**
   * **There are also differences in findings. For example, (1) suggests that …. while (2) argues ….(4) and (3) propose ……… )**
   * **( ) is more rigorous/convincing/useful for my study because …… ( consider blank and blind spots here and connections with other literatures)**

**Compare criteria for quantitative and qualitative research**

Go through the points in the table below so that you have some basic knowledge on how to compare critiically evaluating articles using quantitative and qualitative research methods. You will focus more on one of these when you do a more either the *Quantitative or Qualitative Methods* Module you choose to do towards your mini-thesis proposal.

##### FEEDBACK

|  |  |  |
| --- | --- | --- |
| **CRITERIA** | **IN QUANTITATIVE RESEARCH** | **IN QUALITATIVE RESEARCH** |
| Objectivity | Objectivity is interpreted as the ability to not allow the researcher’s beliefs or values to “interfere” with the research. It is used as a way of ensuring that the true facts – uncontaminated by personal values – are discovered. However, everyone comes with their own beliefs, values and ideas and so there is really no, completely objective research, whether it is quantitative or not. So be aware of this, even though this is what quantitative research will make this claim | It is recognised that pure objectivity is never achievable; the values and beliefs of the researcher will always play a part in research. It is better to recognise this and make the researcher’s beliefs and values explicit. The findings can be confirmed by using different researchers to collect and analyse the same phenomena. |
| Subjectivity | Following from above, subjectivity in conducting and interpreting the research is kept to a minimum; it is assumed that the facts should “speak for themselves”. However, there is not such thing as ‘facts’ on their own. The data we obtain is influenced by the questions we ask and so although quantitative researchers sometimes make this claim, it is important to be aware that facts always occur within a context and a belief framework of both the participants and the researchers. | Subjectivity is an important part of the research process and should be accepted, recorded and reflected upon during the collection and interpretation of information. |
| Reliability | Is defined as the ability to produce the same results when measurements are made by different researchers on the same subjects. However, this also depends on whether the type of questions are subject to change or not. E.g age will chane over time, beliefs may be different over time; the way | We recognise that the social world is always changing and therefore Dependability (where the researcher attempts to account for changing conditions) – is the criterion used instead. Because qualitative research focuses in depth on beliefs, norms, values etc. these are more likely to |

|  |  |  |
| --- | --- | --- |
|  | you ask a question in one part of a questionnaire may elicit a different response to what may appear to you to be a similar one in another part. So be aware of this and exercise caution. | change over time and within the same time period as the partiipant reflects. However, because these are probed in depth and a discussion occurs, you are more likely to obtain rich, ‘thick’ descriptions and data. |
| Validity | The data collected is regarded as an accurate representation of the facts by reducing biases and confounding. However, some bias and confounding is inevitable, so you need to think about this and take account of it, by testing for it. You also need to check your data very carefully for errors in collection, capture and analysis. Use common sense to see where things may not be accurate. For example a study found that women seeking an abortion had lower levels of education than those not seeking an abortion. This was not found in any other studies. This was found to be an error in the analysis.  You can also check validity in quantitative studies where the information is unlikely to change by checking a document, for e.g. an ID document for age, even if there may be errors in documenting this. | The data collected is regarded as an accurate representation of the facts through triangulation, theoretical cohesiveness and checking interpretations with respondents. For example, you should check immediately with your respondents that you have understood them correctly by summarising what you understand they have said; You can also go back and check with them, if this is feasible.You may and have other researchers check your raw data (words) so see if they reach the same conclusions about the key issues (themes) that are emerging; you may use different methods to elict data (observations and indepth interviews); You may also use different methods (e.g. observations and indepth interviews to collect data; You may use different methods of analysis to analyse your data. |

|  |  |  |
| --- | --- | --- |
| Generalisibility | The data is collected, analysed and interpreted with a view to generalising to the level of a population. This is only | The data is generalised to contexts similar to that in which the research was undertaken. This is known as |

|  |  |  |
| --- | --- | --- |
|  | possible if a proper random sample methods is used. | transferability. However, we should not try and make qualitative data meet quantitative criteria. Qualitative studies do not aim to be generalisable. They aim to do something different – provide indepth , rich insights. |

As you can see, the criteria for judging qualitative and quantitative research differ markedly. This is why they should never be judged by inappropriate criteria. When critically appraising the research literature, it is important to bear these criteria in mind. In the next section we move on to critically appraise qualitative research.

### An introduction to critical appraisal of qualitative research

In the previous section, you have seen how one set of criteria cannot be used to critically appraise both quantitative and qualitative research. In this section, we explore some of the questions to ask when critically reading a qualitative piece of research in more detail.

**READING**

Mays, N. & Pope, C. (2000). Assessing Quality in Qualitative Research. *British Medical Journal*. 320 (1): 50 - 52.

Morton, H.,Santich, B. & Worsley, A.(1996). Mothers’ Perception on the Eating Habits of Two Year Olds: A Pilot Study. *Australian Journal of Nutrition and Dietetics*. 53 (3): 100 - 105.

##### TASK 2 – Identify questions for appraising qualitative research

After reading Mays and Pope (2000), write down some of the questions you would ask yourself when critically appraising a qualitative research study. Keep a record of them in your journal for later use when undertaking your literature review and your protocol. Read the Morton et al (1996) and critically appraise it in terms of the criteria below.

**FEEDBACK**

|  |  |
| --- | --- |
| **Criteria for reviewing a qualitative study** | |
| **Criteria** | **Key questions** |
| Worth or relevance | Was this piece of work worth doing at all? Has it contributed usefully to knowledge? |
| Clarity of research | If not at the outset of the study, by the end of the research |

|  |  |
| --- | --- |
| question | process, was the research question clear? Was the  researcher able to set aside his or her research preconceptions? |
| Appropriateness of the study  design to the research question | Would a different method have been more appropriate? For  example, if a causal hypothesis was being tested, was a qualitative approach really appropriate? |
| Context | Is the context or setting adequately described so that the reader could relate the findings to other settings? |
| Sampling | Did the sample include the full range of possible cases or settings so that conceptual rather than statistical generalisations could be made, that is, more than convenience sampling? If appropriate, were efforts made to obtain data that might contradict or modify the analysis, by extending the sample for example, to a different type of area? |
| Data collection and analysis | Were the data collection and analysis procedures systematic?  Was an "audit trail" provided such that someone else could repeat each stage, including the analysis?  How well did the analysis succeed in incorporating all the observations?  To what extent did the analysis develop concepts and  categories capable of explaining key processes or respondents' accounts or observations?  Was it possible to follow the iteration between data and the explanations for the data?  Did the researcher search for disconfirming cases? |
| Reflexivity of the account | Did the researcher self-consciously assess the likely impact of the methods used on the data obtained?  Were sufficient data included in the reports of the study to provide sufficient evidence for readers to assess whether analytical criteria had been met? |

FEEDBACK

Compare your review notes to these: Did you come up with some of these points?

**Worth or relevance**: The study was based on 27 individual interviews with mothers. Notice how the authors have ensured that the research should be regarded as a preliminary study by calling it a pilot study. This assists us as readers to put the research in context. As it stands, the research might not appear to be very worthwhile or relevant; it does not use or develop much theory in our understanding of the topic. Hopefully this might be better elaborated in a subsequent study.

**Clarity of research question**: The question remains very open, even after a discussion of results by the authors. Again, we can hope that they elaborate it further in subsequent research.

**Appropriateness of design**: As an exploratory study, the qualitative research approach might appear to be useful. However, as we will see later, some strategies in qualitative research assist us in going further than mere description to theory or model formulation. This would have required a more in-depth investigation than that undertaken here.

**Context**: The paper does not provide a context for the study, except to say that the interviewees were parents of children in a specific creche, in a particular setting (university child care). We can therefore assume, for example, that the sample was of a specific socioeconomic group, but that is about all.

**Sampling**: The authors discuss the fact that the sample was drawn from responses to a newsletter article and that this might not be representative.

**Data collection and analysis**: Does the research contain details which would allow another researcher to follow the audit trail of this work? There is very little detail about the analytical process beyond the examination of collective responses to each question. There is no information about the themes that may have emerged or the concepts which would have given greater insight into the data.

**Reflexivity of the account**: The research does not account for the ways in which data collection may have influenced findings or analysis. Nor whether there were enough rigorous measures to strengthen the findings.

6 Session summary

In this session we emphasised the importance why it is important to be able to critically review of the literature. We saw that it is important for academic rigour purposes and to know whether the evidence is important in our practice. This applies to both quantitative and qualitative research. Don’t think that qualitative research is easier to do than

quantitative, it needs similar,levels of rigour, using different criteria. Even though samples in qualitative research are smaller, it involves rigorous training, it is time-consuming to collect, transcribe and analyse the data. We provided you with some general points about the different qualities which represent rigour in qualitative and quantitative research studies. You need to choose the method you will use based on the type of questions you want answered – both methods demand the same sort of time and rigour. We also demonstrated, by way of an example, how to critically evaluate a piece of research. Having accomplished all this, you are now in a position to start writing your literature review.

## Unit 3 - Session 3

Writing a Literature Review

### 1 Introduction

In the previous study sessions, you examined the purpose and critical orientation of a literature review; in addition, you identified a set of questions to assist you in critically appraising qualitative studies. Once you have collected a range of studies and articles, it is time to put them together and write a literature review. The most important issue for this module is to be able to write a well structured, accurate and discerning literature (articles relevant to your research questions, aims and objectives) review, with rigorous and accurate referencing. It should also enable the reader to understand the methods used in the different studies so that you can motivate as to why you will use the methods you will explain later. You can do this either by using similar methods in a different context to see if results seem to be similar or using different methods to complement existing data. This study session will present an outline to assist you in structuring a literature review. It will then highlight how a good literature review can be used to further refine the research question. By the end of it, you should have an outline for the structure of your literature review.

#### Session Contents

1 Learning outcomes of this session 2 Readings

1. Structuring a literature review
2. A note in preparation for Assignment 2, Part A 5 Session summary

6 References

#### Timing

In this course of this session, you should embark on your literature review. This is part of your assignment, and is best done before you proceed to the final session of this unit. Plan to spend uninterrupted time on the Internet, taking a storage device (disk or flash drive) along to save the readings you find. Remember also about the advice you were given in previous sessions about taking notes and keeping track of the correct references along the way as you read, so that you have this when you get to writing up

#### 1 Learning outcomes

By the end of this session, you should be better able to meet the intended learning outcomes in the first column; they are part of or relate to the overall Module Outcome/s in the second column:

|  |  |
| --- | --- |
| **Session Outcomes** | **Module Outcomes** |
| * Outline a structure for a literature review. * Write a brief literature review. | * Undertake a rudimentary/ beginner’s critical literature review on the study topic |

### Readings

|  |
| --- |
| Go back and read all three powerpoint presentations by Thomson in Session 1, particularly the one *‘Introductions to journal articles’* and the last slide in ***‘****making sense of literatures - working with small groups of papers’.* |
| Dane, F. C. (1990). Ch 4 - Reviewing the Literature. In *Research Methods*. California, Pacific Grove: Brooks/Cole: 65 - 78. |
| Depoy, E. & Gitlin, L. (1994). Ch 5 - Developing A Knowledge Base through Review of the Literature. In  *Introduction to Research*. St Louis: Mosby: 61 - 76. |
| Go over the chapter on referencing again by University of Bradford. |

1. **Structuring a literature review**

This section will introduce you to structuring a literature review using an outline which can be adapted to other topics. You will then use the outline to examine a published literature review. This task provides further practice in analysing and evaluating a literature review. Refer to sample literature reviews by previous MPH students, Kirstie Rendall-Mkosi (2003) and Magaywa Magafu ( 2006) on Ikamva for ideas.

**TASK 1 – Analyse a literature review**

1. Carefully read the literature review below. As you read, make notes in the margin of the main topics and ideas in each paragraph or section of the review.
2. Try sketching a flow diagram showing the structure of the review. Indicate where the writer uses supporting references for topics or main ideas. Your diagram might start something like this:

BROAD RESEARCH AREA

Global Statistics (Reference)

Maternal HIV-Infection and Perinatal Outcome in a District-Based Prevention Programme for

Mother-To-Child Transmission, Khayelitsha, Cape Town.

##### Literature Review for Maternal HIV-Infection and Perinatal Outcome: Results of a District-Based Prevention Programme for Mother-To-Child Transmission in Khayelitsha, Cape Town by Dingena Koppelaar (1999).

|  |  |
| --- | --- |
| **Literature Review** | **Your notes** |
| Perinatal HIV transmission has been the topic of many researchers in developed | Global Statistics |
| as well as developing countries over the last 15 years. Transmission rates vary | (one reference) |
| considerably among different regions in the world, ranging from 14% in Europe |  |
| to almost 50 % in sub-Saharan Africa (Working Group on Mother-To-Child |  |
| Transmission of HIV, 1995). |  |
| Explanations for these variations involve several factors. Initial studies around |  |
| this topic made use of different methods to calculate and report transmission | Explanation about |
| rates. This problem was addressed during a workshop in 1992 in Belgium, where | rate variations in |
| the use of standard methods was proposed to make studies in this field more | global statistics |
| comparable. Other factors that may explain some of the regional differences are breastfeeding practices, nutritional status and disease stage of the mother or | (6 references) |
| concurrent sexually transmitted diseases (Datta, 1994; Orloff, 1996; Tovo, 1997), |
| all of these often determined by socio-economic circumstances. Obstetric factors |
| such as mode and timing of delivery also seem to play a role (European |
| Collaborative Study, 1996; Landesman, 1996; Tovo, 1996). |
| Some studies focus on the impact of a specific factor related to perinatal HIV |
| transmission in order to formulate guidelines for prevention. Examples of such |
| studies are the impact of maternal disease stage (Blanche, 1994); vitamin A |
| deficiency (Semba, 1994; Greenberg, 1997; Coutsoudis, 1999); or caesarean |
| section (Kuhn, 1996; European Mode of Delivery Collaboration, 1999). Such |
| aspects are usually studied within a group of known HIV-infected pregnant |
| women. |
| Brocklehurst (1998), reports on the findings of a systematic literature review on |
| the association between maternal HIV-infection and perinatal outcome over the |
| period 1983-1996. This review includes 21 studies from developing countries and |

10 studies from developed countries. All these studies were conducted with prospective cohorts of pregnant women identified as being HIV-positive during pregnancy or delivery and a control group of HIV-negative pregnant women. Another prerequisite for this study was that outcome measures had to be pre- specified. Summary odds ratios of the main adverse perinatal outcomes related to maternal HIV infection were reported as follows:

*spontaneous abortion 4.05 (95% CI 2.75-5.96);*

*stillbirth 3.91 (95% CI 2.65-5.77);*

*neonatal mortality 1.10 (95% CI 0.63-1.93);*

*infant mortality 3.69 (95% CI 3.03-4.49);*

*low birthweight 2.09 (95% CI 1.86-2.35) and*

*pre-term delivery 1.83 (95% CI 1.63-2.06).*

The review also highlights that the association between maternal HIV infection and an adverse perinatal outcome is generally stronger for developing countries compared to developed countries. Control of confounding was done in some studies by matching the HIV-infected and uninfected pregnant women for age and parity. Another method to control for confounding was stratification of birth outcomes by maternal disease stage. Different types of multivariate analyses were also used for the same purpose.

Studies like those included in the literature review are similar to the scope of this mini-thesis. The focus is on the overall impact of HIV on pregnancy and its outcome, without knowledge of the HIV status of the newborn, as such test results only become reliable after the first year of life, unless more expensive test methods are used (Orendi, 1998).

Most reports on adverse perinatal outcome of HIV-infected pregnancies come from less-developed countries, whereby perinatal outcome refers to neonatal as well as maternal outcome. The following neonatal outcomes have all been associated with a positive maternal HIV status: *stillbirth, neonatal death, low Apgar score, low birthweight and prematurity* (Aiken, 1992; Temmerman, 1994; Kumar, 1995; Taha, 1995; Chamiso, 1996; Leroy, 1998). Whether these outcomes should be attributed to the HIV status of the child or to the general health status of HIV-infected pregnant women remains unclear (Abrams, 1995; Brocklehurst, 1998).

But even if an HIV exposed infant is uninfected, a low birthweight or prematurity in itself increases the risk of perinatal mortality or morbidity (Taha, 1995; Markson, 1996). Apart from adverse neonatal outcomes, there is also evidence

that maternal HIV infection increases the risk of obstetric complications such as premature labour, chorioamnionitis and postpartum endometritis (Temmerman, 1994; Kumar, 1995; Chamiso, 1996; Orloff, 1996).

A retrospective record study was done to assess the association of maternal HIV- infection with low birthweight (Markson, 1996). This study design has the advantage in that it is easier to include a larger sample, which might produce more convincing results.

So far, no studies have reported any evidence of an HIV dysmorfic syndrome or specific congenital abnormalities in children born to HIV-infected women (European Collaborative Study 1994). In addition several studies found that HIV- infected children rarely show signs and symptoms of their infection during the neonatal period (Abrams, 1995; Nesheim, 1996). Therefore most HIV-infected newborns seem perfectly healthy at birth and only show progress of their disease later in infancy. Most studies in developing countries had larger sample sizes than those conducted in developed countries. This might be one of the underlying reasons why the latter studies fail to demonstrate an impact of HIV on perinatal outcome.

Research on maternal HIV infection and transmission has been rather limited in South Africa; most studies seem to be based on two cohorts of HIV positive pregnant women in Durban.

The first report comes from a prospective cohort of 229 HIV positive pregnant women. The intermediate HIV transmission rate of 181 infants born to these women was 34% (95% CI 26-42). Furthermore this study showed an increased risk of transmission (RR 1.99; 95% CI 1.18-3.34) for women with lower haemoglobin concentrations (< 10 g/dl) during pregnancy and a protective effect from caesarean sections on vertical transmission (RR 0.46; 95% CI 0.23-0.91) (Bobat, 1996; Kuhn, 1996). The impact of breastfeeding on transmission rate, growth and mortality in infants of HIV infected women was studied in the same cohort. The results of this study showed an increased risk of 15% (CI, 1.8-31.8) for transmission by breastfeeding compared to formula feeding.

A more recent study also conducted in Durban assessed the effect of vitamin A supplementation to HIV positive pregnant women in terms of transmission rate and birth outcome. This intervention did not appear to be effective in reducing the overall vertical transmission rate but seemed to have some potential for reducing the incidence of preterm deliveries and the risk of vertical transmission in these preterm infants (Coutsoudis, 1999)(1). In addition, the influence of infant-feeding patterns on early mother-to-child HIV transmission was assessed in infants born to women who were part of the vitamin A intervention trial. Outcomes of this study suggest that exclusive breastfeeding in the first three months might not convey any excess risk of HIV transmission over formula feeding (Coutsoudis, 1999)(2).

##### FEEDBACK

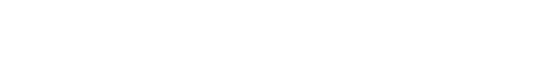
The main ideas, how they are linked, and the number of supporting references supplied are shown in the flow diagram below. This is aimed at helping you to have a logical flow from most general to more specific in your own literature review. Remember once again the principle introduced in Figure 1 in Unit 1, Session 1. Check your flow diagram against this one.

Flow Diagram of a Literature Review for *Maternal HIV-Infection and Perinatal Outcome: Results of a District-Based Prevention Programme for Mother-To-Child Transmission in Khayelitsha, Cape Town*



*Introduction to Broad Research Area.*

*If you have a separate introduction then you can go straight On to these two areas, otherwise start by making the case for your study – draw the reader into its importance.*



*Importance globally*

*Global statistics (Ref)*

*Explanations of rate variations:*

*Studies on the impact of specific factors on perinatal HIV transmission (6 Refs)*

*Literature review findings Who focused on*

*How conducted (Ref)*

*Relating literature review*

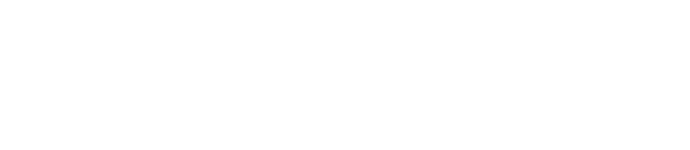
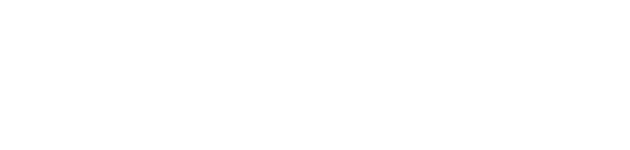
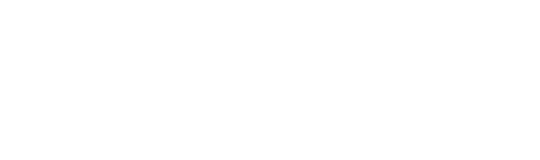
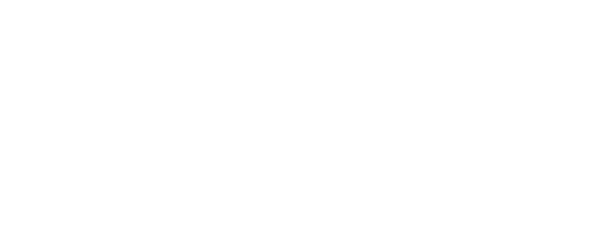
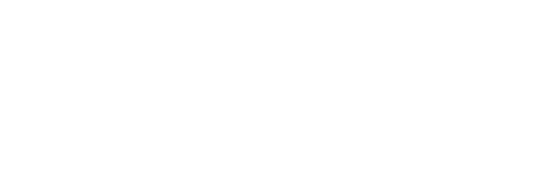
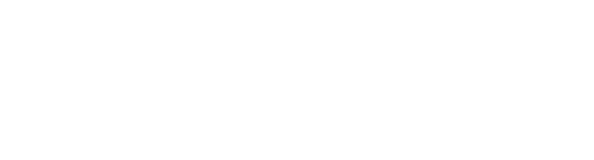
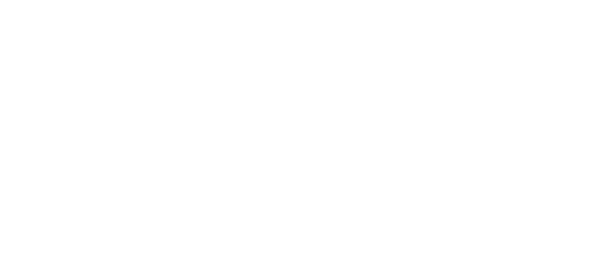
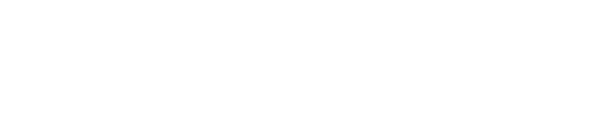
*to this research (Ref)*

*Association between maternal HIV infection & neonatal & perinatal outcomes (14 Refs)*

*Study on association between maternal HIV infection & low birthweight*

*General findings & conclusions of other studies (3 Refs)*

*Why studies in developing countries don’t show HIV*



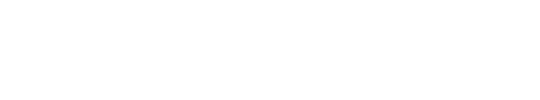
SO *impacting on perinatal*

PH, UWC: *Public Health Research* – U

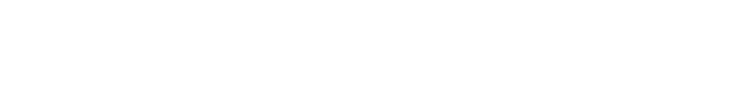
nit 3 32

*Research carried out in S. Africa*

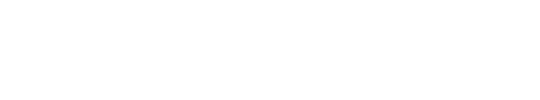
*Main findings - 1ststudy (2 Refs)*



*Main findings - 2nd study*



Now read through the powerpoint presentation *‘Introductions to journal articles’* and these two chapters, focusing particularly on pages 71-73 in Depoy and Gitlin (1994), who offer some excellent suggestions about how to structure a literature review.



**READINGS**

Dane, F. C. (1990). Ch 4 - Reviewing the Literature. In *Research Methods*. California, Pacific Grove: Brooks/Cole: 70 - 72.

Depoy, E. & Gitlin, L. (1994). Ch 5 - Developing A Knowledge Base through Review of the Literature. In

*Introduction to Research*. St Louis: Mosby: 73 - 75.

##### TASK 2 – Developing an outline for a literature review

From the example above and the readings, suggest a generic outline for a literature review – i.e. one that would apply to any topic. You can take one article using a quantitative method and one using a qualitative method to help you. You can use the Stern et al, article as an example of a qualitative study and the Ncube et al article as an example of a quantitative study, if you like. You could also think about a mixed method approach. While you are doing this, think about how you would do a similar type of exercise for you own study literature review.

We will arrange for a brief discussion forum where you give your ideas and experiences of doing this with each other and seek advice if you need this.

##### FEEDBACK

A literature review should start with an introduction which gives an overview of what the

review will cover and a review of specific concepts. If you haven’t yet motivated for your study, you need to do this first, so that the literature you review will draw attention to the reader’s relevance to you study.

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The work of the introduction:

* It must interest and engage the reader. Give them a taste of what is to come.
* It should create the warrant for the paper – in policy, practice, current event, disciplinary issue, literatures.
* It helps to introduce the writer. Establish credibility. Give a flavour of ‘voice’.
* Conventionally the introduction also maps out the paper and indicates the shape of the argument

(Thompson P. *Introductions to journal articles*: slide 2*)* Expanding on this:

* **Locate** – situate the study in a broad context and connect this to the journal reader
* **Focus** – say what the paper is about in particular
* **Argue/Expand** – say what the paper is going to say
* **Outline** – lay out the steps that the paper will take and signal their order (Thompson P. *Introductions to journal articles:* slide 3*).*

Not all introductions are the same, it depends on the subject matter, the journal etc.

These are some approaches to use in introcutions

* Narrative – a vignette from your data
* Media headlines
* Quotations from your data or from relevant literature
* A lively and provocative proposition
* A succinct summary of a current problem or puzzle

BUT YOU DON’T HAVE TO DO THIS FIRST TIME ROUND. You need to get the content of the Introduction sorted and you can finesse the very opening sentences in second and third drafts. However, some people do find that getting the introduction and title going in the right direction in a first iteration sets the tone, and creates the ‘voice’, for the rest of the writing.

(Thompson P. *Introductions to journal articles:* slide 11*).*

You could then start with a broad description of the problem leading to a critical appraisal of studies which shows the relationships between variables and the nature of these relationships between the variables that you are going to study. The next part should highlight the gaps in the literature and identify research needs which will lead to a motivation of how your study may address this gap in the literature. This will establish what new knowledge or findings your study will bring. Remember what we said earlier, that if there is not much or any literature on your specific area or country, read around this and find literature internationally or on a related or comparable area and use the lack of specific literature to your advantage. Finally the literature review should comment on the

study designs and methods used by other investigators and how this justifies your choice of study design and methods.

##### As you have done in your introduction, follow similar steps in your literature review in engaging the reader, estabishing your knowledge and the credibility of the literature you review, map out a care coherent structure.

1. **A note on your assignment for the next Unit**

**Task 3**

Here is a task to help you begin your Literature Review, which is an important part of your of Assignment 2. For your draft assignment do the make a note of the following in preparation

* 1. Literature identified



* 1. Other resources identified



* 1. Have read and made notes of weaknesses and strengths of contents and methods of articles towards critical appraisal of other studies



**TASK 4 – Draft your literature review**

1. Write down the research topic for your proposed research. Think about what your research question will be. What do you want to answer through your research. For e.g. What are the reasons for teenagers not returning to school after childbirth in x region or country?
2. Plan how you will obtain the relevant literature - where you will go, who you will ask, etc.
3. Once you have identified potentially useful literature, try to obtain at least the abstracts or introductions, to enable you to decide which sources are essential for your protocol.
4. Read these in detail and make notes. Decide whether the articles are still relevant to your area of enquiry after reading the abstract. Remember to try and skim read whole articles, highlighting or making notes about the main points. Bear in mind all the time you are doing this, how this relates to you research question and study methods.
5. When you have notes on several sources, start thinking about the structure of your literature review. Try sketching a flow diagram of the main topics and ideas and how they are related, as we

did earlier when we analysed the structure of the sample review. Make sure that your literature has a logical structure. Go for e.g. from the broad to the more specific; make sure that the one areas links to the other; make sure that in doing this you make a case for how this literature is relevant to your topic.

1. Then for each topic or idea, jot down any literature that relates to it.
2. When you have a good outline of your review, with references for all the topics and key ideas, you are ready to start drafting the literature review.
3. As with other written texts, you will probably find yourself drafting and re-drafting the review several times until you feel satisfied with it.
4. IMPORTANT FOR REFERENCING: READ THE VARIOUS READINGS ASSIGNED AND ALSO REFER TO SOPH ACADEMIC HANDBOOK SECTION 5.3 ON HOW TO REFERENCE CORRECTLY, USING THE HARVARD STYLE OF REFERENCING AND ALSO THE UCT GUIDELINES TO THE HARVARD STYLE OF REFERENCING UPLOADED ON IKAMVA. ALSO READ ABOUT PLAGIARISM SO THAT YOU AVOID IT.

NEVER copy or paste without varying the font or colour so that you know it is a quotation or is in some way the idea of someone else. You should always know when you have copied something otherwise you may end up thinking this is your own words and risk plagiarism

### Session summary

In this session, you have covered most of the steps in developing and writing a literature review. Make sure that you are **selective** about what you review. Take care to record all

absolutely accurately from the start, according to your chosen style, preferably the Harvard style but otherwise specify what style you are using and stick to it throughout. Read the literature with a coherent thematic structure in mind, as suggested by Depoy & Gitlin (1994) a. Remember also to identify studies with comparable methodologies for your study and to review them critically in relation to the problem you aim to research.

## Unit 3 – Session 4: Formulating research problems and developing research questions in Public Health

### 1. Introduction

At the end of the session, you should be able to identify a research problem, and develop a research question that is appropriate to addressing a Public Health problem (that is, you should have completed Stage 1 of the *Stages in the Development of a Research Protocol* in the Module Introduction). You should be able to distinguish between how to phrase research problems, research questions, aims and objectives and do this in a draft form on the path to developing your mini-dissertation research proposal.

#### Learning outcomes

By the end of this session, you should be better able to meet the intended learning outcomes in the first column; they are part of or relate to the overall Module Outcome/s in the second column:

|  |  |
| --- | --- |
| **Session Outcomes** | **Module Outcomes** |
| * Formulate a research problem * Demonstrate type of research problems best addressed by quantitative or qualitative methods * Develop a research question after considering the studies already conducted (literature in field – see previous sessions in Unit 3) | * Identify an appropriate research problem and question within the context of literature * Develop an appropriate research question |

In this session, we will practice identifying how to formulate a research problem in Public Health. We will also consider the level of the research questions and the contributions that research activities can make to inform Public Health practice. Through this process, we hope to demonstrate how we can more realistically address the problems that confront us.

#### Session Contents

1. Learning outcomes of this session
2. Readings
3. Identifying research problems and questions
4. A framework for assessing research problems
5. Session summary
6. Reference

There is one new reading in this session, and two tasks. You should also go over the reading by Depoy and Gitlin (1994) where appropriate (see point 4 below: A Framework for assessing research problems)

You should begin to consider a research problem and questions towards your second assignment that is due after you complete Unit 4.

### Readings

**Konteh, R. (1998). Saving mothers’ lives: things can go wrong. *World Health Forum,* 19: 136 - 139.**

### Identifying research problems and questions requiring research

One of the issues that we have touched upon has been the way that interventions or research in health care have not always been able to address common problems faced by health workers. This is highlighted in the following article by Konteh (1998).

**READING**

**Konteh, R. (1998). Saving mothers’ lives: things can go wrong. *World Health Forum,*** 19:**136**

**– 139.**

##### TASK 1 – Identifying a research problem

* 1. **Read the article by Konteh (1998).**
  2. **The article notes a number of problems with many interventions. Using the headings in the tables below, make a list of what the research problem that this evaluation highlights. The first example in each column has been done for you.**

|  |  |  |
| --- | --- | --- |
| **Socio-cultural factors** |  | **Health systems factors** |
| The frequent use of birth attendants for deliveries not anticipated | No base line data on maternal mortality collected prior to study |
|  |  |
|  |  |
|  |  |

##### FEEDBACK

Your table may look something like this, but note that this list is not exhaustive: When you go through this try to think what type of question/s you may ask if you were conducting

quantitative research and what ones if you were conducting qualitative research. Post your answers on a ‘blog’ on Ikamva so that you can share ideas with others and get guidance from the module lecturers.

|  |  |  |
| --- | --- | --- |
| **Socio-cultural factors** |  | **Health systems factors** |
| The frequent use of birth attendants for deliveries not anticipated or used. If we are wanting to know ‘how much’ or measure this problem, we would need quantitative research methods to answer this issue. If we are wanting to know ‘why’ or what underpins the infrequent use, then qualitative methods would be best. | No baseline data on the extent of maternal mortality collected prior to this study. This is a quantitative question in which we want to measure this. |
| Disparity between views of males and females. This could be a ‘what’ or ‘how much’ type of question and a ‘why type of question. We may want to use mixed methods to answer these. | Community leaders unable to distinguish between service providers. If we want to know ‘how much’ or measure this problem, we would need quantitative research methods to answer this issue. If we are wanting to know ‘why’ or what underpins the fact that they are unable to distinguish, then qualitative methods would be best. |
| Food taboos and health habits sometimes a barrier. Finding out what underpins this would best be approached by qualitative research. However, if we wanted to count how many people have particular food taboos or health habits, then this would be answered through quantitative research. | Charges for drugs considered too high by community. If we want to know how many (measure) believe this, then a quantitative method is most appropriate. If we want to know the reasons in depth why this is believed, then a qualitative method is most appropriate. |
| Lack of transport and fuel in villages hampered intervention. If we wanted to know the extent of this problem we would use quantitative research methods. If we want to know how the villagers feel about this, then a qualitative approach | Health workers and aides considered too hostile by local community. If we want to know how many (measure) consider this to be the case, then a quantitative method is most appropriate. If we want to know the reasons in depth why this is believed, then a qualitative method is most appropriate. |

|  |  |  |
| --- | --- | --- |
| would be most appropriate. |  |  |
| Standard of hygiene in homes insufficient. If we wanted to know how much of a problem this is, i.e. how widespread this is, this would involve quantitative research. If we wanted to know in depth why these problems occur, qualitative research would be most appropriate. | No specially designed package to address maternal mortality rates. To design such a package we may first need qualitative research to find out what the community needs and then quantitative research to see what impact this has (measuring). |
| Diseases or complications in pregnancy considered to be of supernatural origins. This is about culture or beliefs. Understanding why would be best probed by qualitative research. If we wanted to know how widespread this belief is or measure it, then quantitative research methods would be best. | Poor record keeping (a what type of problem) by aides and birth attendants. This could be addressed through quantitative or qualitative research methods |

Konteh’s evaluation highlights the fact that knowing about the health side of maternal morbidity and mortality alone provides little help in undertaking an effective action plan. A much wider social and cultural understanding is needed, as well as a full assessment of health systems and their capacity to address the problem.

We will now return to a table that we examined in Unit 2, lesson 2. We had already covered the state of knowledge and the study design. Now examine what the research problems would be and the levels of complexity . These can be summarised as:

* + 1. Problems that seek to describe or explore a phenomenon or an event.
    2. Problems that look at whether there are relationships between phenomena, i.e. try to explain a phenomenon.
    3. Problems that seek to generate information about the relationships.

We are now in a position to use this categorisation to assist us in choosing a type of research problem . This table below that we used before, taken from Varkevisser *et al.* (1997), reflects the categories above, i.e. (1) gaining knowledge about the characteristics of the problem, (2) establishing the relationships between various factors or (3) discovering the extent to which particular factors cause the problems and assessing interventions that

would prevent, control or solve the problems. The table outlines the types of research problems and the types of research questions we would need to ask.

|  |  |  |
| --- | --- | --- |
| **State of knowledge of the problem** | **Research problem** | **Type of research question** |
| Knowing that a problem exists, but knowing little about its characteristics or possible causes  (level 1 question) | We know that a problem exists with respect to x Outline what the problem is that we need to focus on.  (e.g. There is low school performance) | What is the nature/magnitude of the problem?  Who is affected?  How do the affected people behave?  What do they know, believe and think about the problem? |
| Suspecting that certain factors contribute to the problem  (level 2 question) | We don’t know enough about what factors affect a particular problem  (e.g The is scant knowledge on what affects low School performance ) | Are certain factors indeed associated with the problem?  (e.g. lack of preschool education related to low school performance? Is low fibre diet related to carcinoma of the large intestine?) |
| Having established that certain factors are associated with the problem, desiring to establish the extent to which a particular factor causes or contributes to the problem (level 2 question) | We don’t know enough about what the primary causes are  (for eg. there is insufficent knowledge on the primary causes of low school performance | What is the cause of the problem?  Will the removal of a particular factor prevent or reduce the problem? (e.g. stopping smoking, providing safe water) |
| Having sufficient knowledge about the cause to develop and assess an intervention that would prevent, control | We don’t know what interventions work in improving a situation | What is the effect of a particular intervention  /strategy?(e.g. being treated  with a certain drug, being exposed to a certain type of |

|  |  |  |
| --- | --- | --- |
| or solve the problem (level 3 question) | (for e.g there is insufficient knowledge and good evidence on what interventions improve poor school performance) | health education)  Which of the two alternative strategies gives better results?  Are the results in proportion to time/money spent? |

|  |  |
| --- | --- |
| Research problem | **Type of research question** |
| **1)** |  |
| **2)** |  |
| **3)** |  |

### FEEDBACK

Your chart should look something like the one below. We have also added the type of study design appropriate from Unit 2, session 2:

|  |  |  |
| --- | --- | --- |
| **Research problem** | **Type of research question** | **Type of study design** |
| 1) Insufficient knowledge about the cause to develop and assess an intervention that would prevent, control or solve the problem (level 3 question) | What is the effect of one particular set of educational activities compared to another?  What are the cost and resource implications of each activity? | Experimental or  quasi-experimental study design  \*\* see below |
| 2) Insufficient information and knowledge on what factors contribute to the problem (level 2 question) | What are the socio- economic characteristics of the teenagers who are most likely to become pregnant? | Analytical study such as a Case control study design  This may include a  study which compared the family and social experiences of women who had teenage pregnancies with a group who did not. |
| 3) Insufficient knowledge on a problem’s characteristics | What is the nature/magnitude of | Descriptive study design |

|  |  |  |
| --- | --- | --- |
| or possible causes (level 1 question) | teenage pregnancy? | such as a cross sectional survey one design may be to examine the birth records of local delivery centres examining the number and nature of delivery to women 16 years and under. |

### 4. A framework for assessing research problems

Depoy and Gitlin (1994) believe that, broadly speaking, the way we may investigate research problems may be separated into three categories:

1. Problems that seek to describe a phenomenon or an event (the key word is *describe*).
2. Problems that look to see if there are relationships between phenomena (the key word is *relationship*).
3. Problems that seek to generate information about the relationships (the key words are

*cause or effect*).

Let us look at each of these categories in more detail.

##### Research into problems that seek to describe a phenomenon or an event

This category contains an approach to research problems that seeks to find out information about a topic, disease or a population, where little is currently known. This could be for example:

* + - Certain illnesses in a community, e.g. What is the prevalence of depression in my district?
    - Certain practices in professional groups, e.g. What questions do community nurses routinely ask about food access in the home?
    - Certain practices in the community, e.g. What iron containing foods are included

in the weaning diet of children?

We will call these Level 1 questions. They focus on the description, nature or extent of a phenomenon (sometimes called a variable). These questions often establish the severity of a problem that needs addressing. They are *What*-type questions, used in quantitative research. As explained above more analysis can be done to go beyond description in quantitative research and find out what factors are associated with this key issues.

##### Research into problems that look to see if there are relationships between phenomena.

This category contains an approach to research problems that seeks to examine the connection or the relationship between two or more phenomena (variables). This category builds on Level 1 problems and attempts to deepen our knowledge of phenomena. Research problems in this category may include:

* + - What is the relationship between depression and alcohol abuse in the community?
    - What is the relationship between the level of training of community nurses and

their ability to explore home food access problems with clients?

* + - Does the gender of the child influence introduction of iron-containing foods in the

weaning diet?

We will call these Level 2 questions since they go beyond just establishing the nature or frequency of a phenomenon; they deepen our understanding of the complexity of the problem by trying to examine related factors. The way these questions are posed also fall into a quantitative research mold approach.

##### Research into problems that seek to generate information about the relationships

These are questions in research that ask why certain phenomena take place, such as:

* + - Under what circumstances do people who abuse alcohol also develop depression?
    - Why do nurses with less than three years experience feel uncomfortable in asking questions about food access in the home when counselling clients?
    - Why are parents less likely to introduce iron-containing foods to girl children

compared to boys?

We will call these Level 3 type questions: they comprise the most analytical level of

research and often try to develop theories, principles or models. They therefore have a greater degree of complexity than Level 1 or 2 problems. In summary, Level 3 consists of *Why* questions. I.e. these questions seek answers to what are the key factors influencing a particular problem. In multivariate analysis in quantitative research we can analyse which factors really have an effect on this issues. In qualitative research, we can from the outset ask questions that probe more deeply the underlying reasons for this.

Of course, many research studies use all three levels in setting out to formulate research problems. Other studies may only use one level, for example, either Level 2 (relational) or Level 3 (theory, principle or model building) type questions are asked. These can be done using quantitative or qualitative research methods. The main point is to appreciate that research questions have different levels of complexity. Remember that Public Health Research is action-oriented and will therefore seek to answer questions directly related to improving health care – the relationship (Level 2) or cause and effect (Level 3) questions.

**TASK 2 – Recognising the level of complexity of research questions**

**Below are some research questions for you to consider. Allocate each to a level of research**

**Problem and whether the research question is a quantitative or qualitative one drawing on Unit 2 .**

|  |  |  |
| --- | --- | --- |
| **Research Question** | **Level** | **Research method (qualitative or quantitative)** |
| To determine the number of functioning toilets in a village. |  |  |
| To explore in depth the reasons for malfunctioning toilets in a village |  |  |
| To establish whether social class is related to early weaning of infants. |  |  |
| To explore in depth with people of different social classes their beliefs on and ways of weaning infants |  |  |
| To ascertain reasons for incomplete follow up of STI contact cases. |  |  |
| To explore in depth why some people who are STI contacts come in for consultations and why others don’t. |  |  |
| To review the number of pre-term births in the district. |  |  |

|  |  |  |
| --- | --- | --- |
| To examine in depth what kind of situations women live in when they become pregnant in terms of age, nutrition, poverty etc. |  |  |
| To examine whether birth interval affects malnutrition in children. |  |  |
| To examine in depth what community members believe about spacing of children. |  |  |
| To determine the reasons why failure to thrive is more common in girl rather than boy children under 5 years. |  |  |
| To explore in depth beliefs around gender norms with respect to care of girl and boy babies in the community |  |  |

##### FEEDBACK

Your table should look something like this:

|  |  |  |
| --- | --- | --- |
| **Research Question** | **Level** | **Research method (qualitative or quantitative)** |
| To determine the number of functioning toilets in a village. | **1** | **Quantitative** |
| To establish whether social class is related to early weaning of infants. | **2** | **Quantitative** |
| To ascertain reasons for incomplete follow up of STD contact cases. | **3** | **Quantitative** |
| To review the number of pre-term births in the district. | **1** | **Quantitative** |
| To examine whether birth interval affects malnutrition in children. | **2** | **Quantitative** |
| To determine the reasons why failure to thrive is more common in girl rather than boy children under 5 years. | **3** | **Quantitative** |

To summarise so far, it is important to consider the complexity of your research question. This does not mean that your research needs to be complicated. There is a great deal of difference between the notion of complexity and the notion of being complicated. Indeed, one of the important considerations in research is to study complexity in ways that are streamlined and not complicated.

**Unit 3 - Session 5**

# Formulating Research Aims and Objectives

### 1. Introduction

In the previous study session you learnt how to formulate a research problem and derive from this research questions This study session will now take you through the next step of developing your research protocol which is to formulate some research aims and objectives. We will also deal with study purpose that is different from the study aim or objectives. The aim of this study session is to illustrate the transition from research questions into concrete activities, to guide research activities.

#### Session Contents

1 Learning outcomes of this session

1. Readings
2. Identify good aims and objectives
3. Formulate clear aims and objectives
4. What is a study purpose and how is this difference from aim and objectives
5. Session summary

#### Timing

This session contains one core reading and ten tasks aimed at assisting you in developing your confidence in formulating aims and objectives and a study purpose. Follow them through systematically, and you should have the next section of your assignment completed. The timing will depend on your prior experience and work to date.

#### Learning outcomes

By the end of this session, you should be better able to meet these intended learning outcomes:

|  |  |
| --- | --- |
| **Session Outcomes** | **Module Outcomes** |
| * Distinguish between research aims and objectives. * List key features of aims and objectives. * Evaluate 4s and objectives. * Write clear aims and objectives. * Be able to formulate a research purpose, different from the aim and objectives | * Be competent at writing up a study aim, objectives and study propose , bearing in mind a study design. |

### Reading

Joubert, G. & Erhlich, R.(2007). Ch 6 - Setting Objectives for Research. In *Epidemiology: A Research Manual for South Africa.* Cape Town: Oxford University Press: 56 - 63. [on iKamva]

### Identify good aims and objectives

In previous study sessions, you prioritised and analysed a research problem until you focused on a specific aspect of the core problem. You then drew up a problem statement. The literature review assisted you to further clarify the issues and may have given you some ideas about how to address the problem. You are now ready to formulate the overall aim and specific objectives of the research. This section guides you in doing this. **The aim of research is in a nutshell the ‘what’ of research therefore there is usally only one. The objectives are the ‘how” – what are you going to do to achieve the aim. The aim is the overall intention, where you hope to be by the end. The objectives focus on the steps you will take to achieve this and that is why there is usually more than one**. The objectives are a detailed ‘laundry list’. Therefore you should avoid, an aim and objectives that don’t connect. Neither should they be exactly the same. They need to be achievable – the whole study can not success because the aim and objectives are not achievable or sturdy enough. Very importantly as well, the aim and objective underpin the design. They generate the questions you ask and therefore when you have formulated your research tool, you need to check back with your aim and particularly your objectives to make sure you have included everything and haven’t included issues that are not relevant to your research.

##### TASK 1 – Compare and summarise features of aims and objectives

Read Joubert and Ehrlich (2007). It describes stages 1 - 3 of writing a research protocol,

i.e. stating the research problem, literature review and setting aims and objectives. Answer these questions.

1. What are the main features of a good aim?
2. What are the main features of a good objective?
3. What is the difference between aims and objectives, and how are they related?
4. How do objectives relate to the research methods used?
5. Why is it important to formulate good aims and objectives?

##### FEEDBACK

According to Joubert and Ehrlich, a good aim:

* + is related to the initial research problem.
  + is clear and precise.
  + can be defined.
  + is achievable with the time and resources available.

Good objectives:

* + cover the different aspects or individual components of the problem and its contributing factors in a coherent way and in a logical sequence.
  + are clearly phrased in operational terms and are easy to apply in practice.
  + are commonly phrased in measurable terms.
  + are clear, specific and unambiguous.

The aim of the study states what is expected to be achieved by the study overall, while objectives indicate the specific information the study must yield and the detailed research questions that must be answered to fulfil the aim.

Objectives specify what you will do in your study, where and for what purpose. Objectives indicate what is to be achieved. The methods specify how the objectives are to be achieved.

Formulating good aims and objectives is important because:

* + - They help to focus the study (narrow it down to essentials).
    - They avoid collection of data that are not strictly necessary for understanding and solving the problem.
    - They determine the planning of the study and to organise the collection, recording, analysis, interpretation and utilisation of the data.
    - They are helpful in evaluating the implementation of the study.

##### TASK 2 – Evaluate aims and objectives

Read the research aim and objectives below around women’s perceptions of antenatal care (ANC) services. Then answer questions (a) – (c).

##### Aim:

To investigate the perception of women of the ANC services run by the local health authority.

##### Objectives:

1. To identify a representative group of local women users of ANC clinics.
2. To describe the opinions of this specific group of users about the quality of care at ANC clinics.
3. To share and discuss the results with clinic staff and management.
4. To make recommendations to improve the care provided at ANC clinics.

Now answer these questions:

1. Which objectives are concerned with implementation?
2. What clues tell us that the aim and objectives are phrased in operational terms?
3. To what extent are the aim and objectives clear, specific and unambiguous?

##### FEEDBACK

1. The two implementation objectives are:

* To share and discuss the results with clinic staff and management (3).
* To make recommendations to improve the care provided at ANC clinics (4).

1. Operational objectives indicate what is to be done or performed and use *action words* such as to investigate, to identify, to describe, to share and discuss, to make recommendations.
2. The aim and objectives are clear, specific and unambiguous. The only term that might seem vague is “quality of care”, because we do not know which aspects of quality of care the research will focus on. However, this term or key word will be defined and described in detail, as part of the research.

##### Action Words

Other action words used to state aims and objectives include: To determine To verify

To calculate To establish

To measure To list

To compare To map out

To find out

Avoid using vague non-action verbs such as “to appreciate” or “to understand”.

Other verbs such as “to study”, “to investigate” or “to find out” can be used, but should only be used to introduce more specific actions in the rest of the sentence.

##### TASK 3 – Identify aims and objectives

1. The research projects A - C below are all concerned with tuberculosis. Each project has one main aim and several objectives. Identify the aim and the objectives in each set.
2. Having identified the aims, say which aim has all the features of a good aim? Explain your choice.
3. Which of these aims does NOT have the features of a good aim? Explain why they are not good and try rewriting them.
4. Which of these objectives do NOT have the features of a good objective? Explain why they are not good and try rewriting them.

##### Project A:

1. To understand the TB programme problems from National TB managers.
2. To study the problem of TB in Southern Africa.
3. To map the distribution of patients with TB in Southern Africa.
4. To measure the socio-economic status of TB patients.

##### Project B:

1. To make a list of all the TB clinics and staff in the district.
2. To do a situational analysis of the district TB programme.
3. To make recommendations to the TB services manager.
4. To measure the TB defaulter rate in the district.

##### Project C:

1. To identify a group of TB patients who are below 10 and are currently on treatment.
2. To study the appetite of children with TB.
3. To describe the nutritional status of children with TB.
4. To measure the dietary intake of all children with TB in the study.

##### FEEDBACK

1. Compare your answers to these:

|  |  |
| --- | --- |
| **Aim** | Objectives |
| **Project A:**  To study the problem of TB in Southern Africa. | * To map the distribution of patients with TB in Southern Africa. * To measure the socio-economic status of TB patients. * To understand the TB programme problems from National TB managers. |
| **Project B:**  To do a situational analysis of the district TB programme. | * To make a list of all the TB clinics and staff in the district. * To measure the TB defaulter rate in the district. * To make recommendations to the TB services manager. |
| **Project C:**  To study the appetite of children with TB. | * To identify a group of TB patients who are below 10 and are currently on treatment. * To describe the nutritional status of children with TB. * To measure the dietary intake of all children with TB in the study. * To understand the beliefs of parents about feeding children with TB. * To understand the appetite of children with TB. |

1. The third aim, Project C, is the best, because it is clear and precise, worth doing and probably achievable.
2. The first two aims are not very good aims because they are too broad and vague. The first aim in particular is not easily achievable. Both aims use the vague action word “study”.

The two aims could be rewritten like this:

* + To perform a profile of the national distribution and profile of TB patients.
  + To measure the appetite and diet of children with TB in Cape Town.

1. The only objective that is a little unclear is: *To understand the appetite of children with TB.*

It would have been better phrased using a more specific action verb instead of “to understand”. This would also make it easier to evaluate whether the objective has been achieved. We could then rewrite the objective as follows: *To record or to measure the appetite of children with TB.*

In the next section, we explore the development of clear aims and objectives.

### Formulate clear aims and objectives

In this section, you will practise formulating clear aims and objectives for research studies.

**TASK 4 – Formulate clear aims**

Look back at the problem analysis on the high TB defaulter rate presented on page 59 of the reading by Joubert and Ehrlich (2007). Imagine that your literature search and discussions with service managers and nurses have suggested that the key problem has to do with the poor quality of the service. This is noted under “service factors” on the left side of the diagram.

Write down one or two possible aims for a study to look at the influence of the quality of service on TB defaulters.

##### FEEDBACK

Possible study aims include:

* + To measure the quality of service at different TB clinics and compare it with the defaulter rates at the different clinics
  + To improve the quality of service given to TB patients and to measure any change in defaulter rate
  + To measure the level of satisfaction with the quality of service between defaulters

and non-defaulters

Now work on your formulation of study objectives.

##### TASK 5 – Identify clear objectives

Think about this study aim:

To measure the level of satisfaction with the quality of service between defaulters and non-defaulters.

1. What objective would you start with? Write this down.
2. Think about subsequent objectives that need to be achieved so as to reach the main aim. Remember to include at least one implementation objective. Think of the best order in which things should be done. Write down the objectives in this order.

##### FEEDBACK

Here are some objectives that we have come up with:

The first objective might be to find defaulters and non-defaulters:

* *To identify defaulters and non-defaulters using the same TB service*

We then need to measure the level of satisfaction amongst these two groups. So the second objective might be:

* *To measure the level of satisfaction with the quality of the TB service amongst defaulters and non-defaulters.*

After this we need to compare the results between the two groups. So our third objective might be:

* *To compare the level of satisfaction with the quality of the TB service amongst defaulters and non-defaulters.*

##### TASK 6 – Produce a problem analysis diagram and a problem statement

1. Imagine that you are a hospital manager. You have received complaints from your outpatient staff that they are seeing too many inappropriate cases that should be dealt with at the primary health care clinic. You decide to investigate this further by doing a small research study to look into the matter. Look back at Unit 1 and the way you drew up a problem analysis diagram for the problem of poor use of ANC services. Draw a similar diagram for the possible causes of the inappropriate use of the hospital OPD.
2. Use the diagram to write a problem statement.

##### FEEDBACK

Here is an example of a problem analysis diagram.

*Poor access to local PHC clinic*

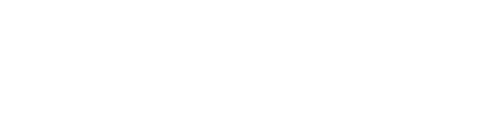
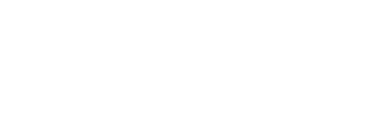
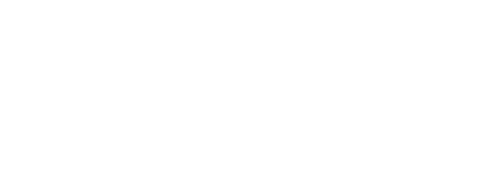
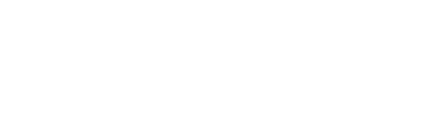
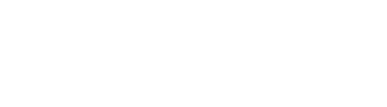
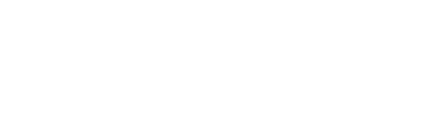
*Lack of drugs at PHC clinics*

*Poor quality of care at local PHC clinic*

*Preference to see a doctor*

*Inappropriate OPD cases*

*Longer waiting times at the PHC clinics*



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b) Possible problem statements might read as follows:

* The OPD department at the hospital is very busy. Many of the cases are inappropriate since they could also have been treated at a primary health care clinic. One reason for this could be the access to health services by the local community.
* The OPD department at the hospital is very busy. Many of the cases are inappropriate since they could also have been treated at a primary health care clinic. One of the reasons for this could be the poor quality of service that they receive at the primary health care facilities.
* The OPD department at the hospital is very busy. Many of the cases are inappropriate since they could also have been treated at a primary health care clinic. One of the reasons could be that they like to be seen by a doctor only at the hospital.

##### TASK 7 – Formulate possible research aims

From your discussions and literature review, you have decided to concentrate on access to health services as a possible reason for the inappropriate use of the OPD, as formulated in the problem statement above.

What could be the aim of such a study? Try formulating one or two possible aims.

##### FEEDBACK

Possible aims of the study could be:

* + To investigate the difference in access to primary health care clinics and the hospital OPD; or
  + To investigate the different barriers clients face in attending primary health care

clinics; or

* + To identify whether access to the hospital OPD is a reason why people do not go to the primary health care clinic instead.

##### TASK 8 – Formulate objectives

Formulate four or five objectives that would enable you to achieve this aim:

*To investigate the difference in access to primary health care clinics and the hospital OPD*.

##### FEEDBACK

Here are some examples of possible study objectives:

* To measure the number of *inappropriate* cases seen in the hospital OPD over a period of one week.
* To compare the area of residence of *inappropriate* cases with *appropriate cases*.
* To map out the distribution of primary health care clinics in the district.
* To compare the total cost for patients in different parts of the district to come to the hospital or to visit their local clinic.
* To establish the knowledge of OPD patients about the existence of and services

provided by local primary health care clinics.

* To compare the time taken to attend the clinic versus the time taken to attend the

hospital OPD.

* To compare the opening hours of the clinics with those of the OPD.

##### TASK 9 – Formulate good aims and objectives for your protocol

1. For the problem statement or question identified for your research, write down your aim and objectives.
2. Review your aim and objectives by asking yourself these questions: Is the aim:
   * related to the initial research problem?
   * clear and precise?
   * defined and achievable? Are the objectives:
   * dealing with the different aspects of the problem and its contributing factors in a logical and coherent way?
   * clearly phrased in operational terms, and easy to apply in practice?
   * phrased in a way in which they can be measured?
   * clear, specific and unambiguous?
   * looking at how the research results will be used to solve the problem - in other words, are they implementation objectives?

##### 5 What is a study purpose

Often researchers find the difference between the aim and objectives confusing and therefore may put the purpose into the aim or objectives. The research purpose is the **reason** you are doing the research. What you hope to do with it. For example, you may want to inform further research. You may want to use it to develop an intervention. You may want to use it to feedback to stakeholders or to input into policy or service delivery.

In short, there is a research cycle. A literature review produces a research problem and question (gap in knowledge). Aim aim is to close the gap in knowledge (i.e answer the research question), which we achieve by providing for example a **contribution to knowledge (this could be the purpose).**

It is clear therefore that the study **purpose is different** from the aim and the objectives **– it is a practical longer-term goal.** It is the target or goal you wish to achieve at the end of the research

|  |  |  |  |
| --- | --- | --- | --- |
|  | **TASK 10 – Formulate a study purpose** |  | |
|  | | | |
|  | Formulate a study purpose on the basis of the aim formulated for example, that you aim: | |  |
| **To investigate the difference in access to primary health care clinics and the hospital OPD*.***  ***The purpose should be what you want to do with this research. Try doing you own research purpose related to your proposed study.*** | | | |

### 6 Session summary

In this session you have further analysed the research question by formulating an appropriate aim and breaking this down into relevant objectives. The objectives are as they now allow you to identify what information you need to collect so that you can plan how you are going to collect this information.

This study session stressed the importance of having clear and concise aims and objectives. These come from the problem analysis diagram and literature review. Many experienced researchers will tell you that formulating good aims and objectives is one of the most important parts of developing a research protocol/proposal.

In relation to your assignment, you should now be able to begin develop aims and objectives for a proposed research study. This will allow you to start considering the operationalisation of a research problem.