Chapter 1
Introducing research

NMC Standards for Pre-registration Nursing Education

This chapter will address the following competencies:

**Domain 1: Professional values**

7. All nurses must be responsible and accountable for keeping their knowledge and skills up to date through continuing professional development. They must aim to improve their performance and enhance the safety and quality of care through evaluation, supervision and appraisal.

9. All nurses must appreciate the value of evidence in practice, be able to understand and appraise research, apply relevant theory and research findings to their work, and identify areas for further investigation.

**Domain 3: Nursing practice and decision making**

10. All nurses must evaluate their care to improve clinical decision-making, quality and outcomes, using a range of methods, amending the plan of care, where necessary, and communicating changes to others.

**Domain 4: Leadership, management and team working**

6. All nurses must work independently as well as in teams. They must be able to take the lead in coordinating, delegating and supervising care safely, managing risk and remaining accountable for the care given.

NMC Essential Skills Clusters

This chapter will address the following ESCs:

**Organisational aspects of care**

9. People can trust the newly registered graduate nurse to treat them as partners and work with them to make a holistic and systematic assessment of their needs; to develop a personalised plan that is based on mutual understanding and respect for their individual situation promoting health and well-being, minimising risk of harm and promoting their safety at all times.

For entry to the register:

14. Applies research based evidence to practice.
Introduction

The human condition is such that we are always striving to better ourselves and our lives. This is especially true of healthcare, where much money is invested each year in research and development. Many nurses think that research is something that is beyond them, something other people do, and that what they should do is simply respond by adopting new working practices following critical appraisal of the research. Unfortunately, recent practical, political and ethical restrictions on the undertaking of research by undergraduate and pre-registration healthcare professionals mean that this is indeed the case, and many nurses will never have the opportunity to experience the wonder of being the first to understand something or of discovering a new truth.

The truth about people who do research in nursing is not that they are different or in some way better than other nurses; it is more the fact that they have learned to ask questions about healthcare provision. Furthermore, they have learned to ask questions in very specific ways, ways that allow for the question to be explored and in some instances answered in a meaningful way.

The purpose of this book is not to create world-class nurse researchers but to introduce you to the methodologies and methods that nursing and other healthcare researchers use to explore the exciting and challenging world of healthcare provision.

Before going any further, let us pause for a moment to think about what is meant by research in the context of this book. The term ‘research’ is used to describe the structured and conscious application of scientific method to the exploration of an issue of interest in order either to better understand the issue or to establish new truths. This process of understanding or establishing new truths is termed empirical research. Empiricist philosophers throughout the centuries have been concerned with establishing and understanding the nature of reality. So empirical research implies rather more than looking up a topic in the library or on the internet and discovering knowledge that is new to you. Empirical research is about discovering new knowledge and understanding for human kind.

Over the next five chapters, this book will take you on a tour of the major methodologies, methods and analytical processes used in nursing, health and social care research. The aim is to equip you with the understanding that will enable you not only to read and understand research
in this area but also to think about how and why research is important to what we do as nurses. The book will establish what constitutes an appropriate research question, how research is undertaken, where and with whom research is undertaken, and what it can reasonably answer.

The research process

Coming up with a research question and then designing, undertaking, analysing and reporting research is a structured procedure that almost invariably follows the same process (see box below). This research process aids in ensuring that the research undertaken is fit for purpose; that is, it addresses the issue under consideration in a methodical manner.

The stages of the research process

- Identification of the issue in need of research (often a clinical issue).
- Undertaking a literature review (this stage is omitted in some qualitative methodologies).
- Stating the purpose of the research (what is it trying to achieve).
- Deciding the specific research questions, aims, objectives or hypotheses.
- Collecting the data.
- Analysing and interpreting the data.
- Evaluating and reporting the research findings.

The identification of a topic for research will more often than not be a response to a clinical or practice-related requirement. Such questions might arise out of uncertainty about what to do or what might work best for a given situation (see the following section on the uncertainty principle). In turn this uncertainty leads the researcher to the need to review the literature existing in a given area with the express purpose of deciding what it is the research can reasonably be expected to answer (this will depend on the nature of the question being asked (see the section on research paradigms on pages 11–12).

The nature of the problem being addressed will then determine the way in which the research question is asked. Since different methods are used to answer types of research questions, data collection will be determined not by researcher preference but in response to the need to use the right method to answer any given question. For example, if a question is about the handwashing behaviours of staff, the data collection method will need to include some element of observation, while if the question relates to staff understanding of the need for handwashing, then staff understanding can only be measured using questionnaires or interviews.

Once data are collected the analysis of the data needs to be driven by the type of data collected for the study, so data that are in numerical form will require statistical analysis and those in word form will need some form of qualitative data analysis. All research should then be subjected to some consideration of how well it has answered the original research question: Was it able to answer the question? Were there issues with the process that might be improved? Do the findings reflect other research in the area?
All of these elements of the research process will be addressed in more detail in the subsequent
sections of this chapter and in more specific detail within the various chapters of this book.

The uncertainty principle

The starting point for all research is uncertainty. Uncertainty in the case of research is no bad
ting. It is the lack of certainty in an area that creates a question. Uncertainty arises in all areas
of health and social care, from questioning whether a new drug will cure cancer to understanding
what it is like to live with respiratory disease.

So if the starting point for research is uncertainty, where do we move to next? Plainly there is a
need to frame research questions that are relevant to the problem being considered, and that are
also able to address the uncertainty raised. It is important here to state that, because of the
element of uncertainty that underlies each question, there is also uncertainty about whether the
question we pose can be answered satisfactorily. So at the heart of research lies uncertainty not
only about an element of care but also about how, and indeed whether, we can actually answer
the questions raised. Research seeks to answer questions, but there are no guarantees that it can.

Why is research important then? If we cannot guarantee that research can answer the questions
we pose, why do it? These are very reasonable questions. Any research is only as good as the
methodologies and methods it employs. All research methodologies and methods have their
strengths and weaknesses, and all research findings are open to being disproved or modified by
later research. What is important about nursing research is that researchers try to answer, to the
best of their ability, important questions about the care we give.

Concept summary: the uncertainty principle

The uncertainty principle is the starting point for all research, as it establishes that there
is something about the care we provide that we are not sure of. We may be uncertain how
patients make sense of living with a disease, or how they understand the care we are
providing, or indeed whether the care we provide is beneficial to them. Uncertainty causes
us to ask questions. If we take the examples above and apply them to specific care scenarios,
some questions we might ask are:

• what is it like to live with multiple sclerosis?
• do patients undergoing chemotherapy understand its purpose?
• does daily dressing of pressure ulcers aid their healing?
• what are the mental health issues facing individuals with learning disabilities?

Each of these scenarios is important in different ways, and each leads us to ask questions
about what we do as nurses; each contains an element of uncertainty.
Chapter 1

Using research to answer questions about the care we give is important because it allows us to develop increasing certainty about what we do. It allows us, as nurses, to be able to justify our practice; it provides, at least in part, an evidence base.

Activity 1.1

Critical thinking

Make a list of the reasons, both clinical and political, why research is important in informing the practice of nurses. Don’t think just about the individual patient, think also about wider society and the greater good.

An outline answer of what you might find is given at the end of the chapter.

Developing research questions

So far we have seen that the starting point for research is uncertainty about a question or questions that, in the context of this book at least, arise out of clinical practice. How, then, do we ask questions and what structures might we apply to the process?

Asking questions for research requires considerable thought, not only about the question itself but about whether the answer to our questions already exists. It may be that the questions arise out of clinical observations or interactions that have occurred in practice. Such questions may lead us down one of two pathways. The first is to seek clarification of the state of knowledge by reading the existing literature within the area of interest. The second is to ask questions that as yet have no, or only limited, answers.

Reviewing the literature on a topic is in itself a skill and one with which you may already be familiar. The existence of high quality, readily accessible bibliographic databases makes it increasingly easy to scrutinise the literature in order to find out the state of knowledge in a particular area. Online databases, such as the Cumulative Index of Nursing and Allied Health Literature (CINAHL), are a first point of call for many researchers. It is worth taking time and making the effort to learn and understand the processes by which these databases can be searched. Your university or hospital librarian will most certainly be able to help with this.

It is important to realise that, even if research has already been carried out within a given area, there may still be questions about its applicability to particular situations or circumstances. Gomm (2000a and 2000b) asks two important questions of research: ‘Would it work here?’ and ‘Should we afford it?’ Gomm points out that just because research has shown that a certain intervention works in one setting with a particular set of individuals does not mean that it will work somewhere else. For instance, because a particular health education programme has worked in England among older people with hypertension does not mean that it will work in India, or among younger people, or indeed among people who have another disease entirely.

‘Should we afford it?’ (Gomm, 2000b) makes the point that some interventions in the health and social care setting may be so expensive and their benefits so minimal that it may not be appropriate to use them. Indeed, we may, in the process of reviewing the literature, identify other,
less costly interventions that provide a similar, or equal, level of benefit. Quite clearly there are also ethical and moral questions about what level and types of health care interventions society should fund.

Gaining answers to these questions is important both when searching the literature and in planning research. Having answers to both these questions helps the would-be researcher decide whether what they want to do is of potential benefit. The whole purpose of research in nursing is that it provides us with knowledge to improve what we do and how we do it.

Once the research literature has been searched and a need for further research to answer a question of importance to practice has been identified, the researcher will move on to formulating a question that will guide the design and execution of the research project.

There are two models for question formulation that are widely used in health and social research. These models allow the researcher to focus not only on the research question but also on how the literature databases will be searched. Each model employs an acronym (SPICE and PICO) that helps the researcher focus and frame the research question in a logical and methodical manner.

The SPICE model is most commonly applied to research aimed at answering questions that have a qualitative element to them (see later). SPICE stands for:

- Setting;
- Perspective;
- Intervention;
- Comparison;
- Evaluation.

A couple of examples of the application of the SPICE model will help to illustrate how it helps to frame the search and research question. In our first example, we want to explore patients’ understanding of living with asthma. We choose to focus on patients who are not usually unwell as a result of their asthma, and so concentrate on the general practice setting. The perspective of the study, i.e. what the research is about, is clearly asthma. Because we are interested in people’s understanding, we will not be applying an intervention. Comparisons of understanding might arise, possibly by chance, from the study, for instance between those newly diagnosed and those with a long-established diagnosis. The evaluation of the study will involve understanding people’s perceptions of living with asthma and exploring these perceptions.

**Activity 1.2**

Using the SPICE model, decide how you might frame a research question relating to a problem or issue from your area of practice. Remember, it is not necessary to use all of the elements of the models in every type of research. Which of the elements you use will depend on the type of question you are asking.

*As the answer is based on your own observation, there is no outline answer at the end of the chapter.*
In our second example we are interested in the effects of an education programme on people’s understanding of living with asthma. Our setting is again general practice. Our perspective remains asthma. Because we want to measure the effects of the education programme, we clearly are applying an intervention, which is the education programme. In order to understand the effectiveness of the programme, we need something to compare to. This might be people’s understanding of asthma before and after the programme or it might be the difference in understanding between one group who had the intervention and another group who did not. Our evaluation will then consist of identifying the level of difference in understanding between the intervention and non-intervention groups.

The PICO model is usually applied to research studies that involve an intervention, although, as we have seen, the SPICE model can also be used for this purpose. PICO stands for:

- Patient or Problem;
- Intervention;
- Comparison;
- Outcome.

PICO will work equally well as a method of illuminating the elements of the second example above. In this instance, therefore, patient refers to patients in general practice with asthma. The intervention remains the education programme. Comparison is still that of understanding before and after the education programme, while outcome refers to the improvement, or not, in patients’ understanding of living with asthma.

Using the PICO model, decide how you might frame a research question relating to a problem or issue from your area of practice. Remember, it is not necessary to use all of the elements of the models in every type of research. Which of the elements you use will depend on the type of question you are asking.

As the answer is based on your own observation, there is no outline answer at the end of the chapter.

Once framed in this way, it is easier to create a list of all the words and phrases associated with the potential research question. This list will itself enable you to structure your literature review, which will in turn inform the research plan. Such a list will include not only the key words but also synonyms, and lay and technical terminology. For example, pressure ulcers may appear as pressure sores, decubitus ulcers, bed sores, skin ulcers, etc. It would be useful to search using all of these terms.

It is also helpful to apply some limits within which the bibliographic database should search: for example, it may be helpful to limit the search to the last five or ten years depending on the topic. It is also worth asking your hospital or university librarian about access to other sources of information such as unpublished reports or university theses.
The literature search and identification of existing research is likely to leave you in one of three positions. The first is that the topic that you are interested in has already been well researched, and the research covers a similar patient group to the one you care for. Depending on the age of the research, you may feel further research to inform a potential change in practice is unnecessary. However, it is always worth being cautious about applying research that has only been undertaken once without putting in place some form of local evaluation and audit of the change. This is because sometimes research can actually come to the wrong conclusions!

The second position is that the research has been done, but in a group, or in a place, very dissimilar to where you want to apply it. For example, the research may have been done abroad, the ages of the participants may be very different from the patients that you care for or the patients may have come from a different ethnic or cultural background. This may lead you back to Gomm’s (2000a) question, ‘Would it work here?’

The third situation is that the research has not been done anywhere that you can find. So you are left where you started, with a question, or questions, that need answering. It is important to look at these questions and identify approaches that might usefully be employed in answering them. At this point, it might be useful to return to your PICO or SPICE model in order to help you think about how to structure and present the research question.

Before we go on to explore how we place our question within a research framework, a note of caution is needed. Some research, such as grounded theory and phenomenology (explained in Chapter 2), requires researchers to start with limited preconceptions about what they might find. This means that it may be necessary for a researcher to avoid engaging in a full literature search at the start of the study. This is something that should be discussed with a research supervisor.

You may have noticed that the questions we have asked so far fall into two distinct categories. The first category includes questions about things we can measure directly, such as the rate of healing of a pressure ulcer. The second category is more elusive. It is about feelings, understanding and being, and is therefore more difficult to measure in any direct, objective way.

**Research paradigms**

This difference in the emphasis of the questions asked leads us to the first rung of the research ladder: identifying the nature of the question being asked. In research terminology this means we need to identify the **paradigm** within which the question sits. Simply put, paradigms are the philosophical basis of the question being asked, the nature of the enquiry needed in order to address the question that has been identified.

In health and social care research, as in most practical research, it is usual to identify two paradigms, the **quantitative paradigm** and the **qualitative paradigm**. These paradigms refer to two different ways of viewing the world and reality.

The quantitative paradigm is perhaps the one you might most associate with scientific ways of thinking and enquiry. It involves viewing the world in ways that are measurable – provable if you like. The ‘quantitative’ element of the paradigm refers to the ability of research within this
Chapter 1

paradigm to quantify its findings. In other words, the findings can be counted or can be demonstrated in a way that is measurable.

Quantitative research is concerned with proof, with cause and effect and with demonstrating associations between variables. Quantitative research often starts with a hypothesis, an idea yet to be tested using established scientific methods. Chapter 4 explores the approaches to research that lie within this research paradigm.

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Activity 1.4

Given that quantitative research paradigms are concerned with things that can be counted, and with cause and effect, think about what questions you could ask about where you currently work that fit this paradigm. What clinical problems might be best answered using this approach?

*Keep your notes on this safe and return to them when you read Chapter 4 where you will find many examples of this type of research to compare your notes to.*

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Data collection within the quantitative paradigm is deductive. That is, quantitative research starts with a hypothesis, or idea, that it seeks to confirm or refute. Deductive reasoning follows predetermined methods for collecting data. Deductive research works from general observations towards a more specific outcome and in this respect it is considered to be ‘knowledge driven’ – that is, it is about things we think we know, such as things we see and things we can quantify. Its primary purpose is to prove or disprove areas of perceived knowledge. Figure 1.1 gives a diagrammatic representation of deductive research.

The qualitative paradigm is the one that you might most associate with the social sciences and ‘people-centred’ methods of enquiry. It is a way of looking at the world from the point of view of people. It enquires about what people feel, think, understand and believe. The qualitative paradigm is not so concerned with proof – more with describing and understanding human experiences from the point of view of the people who have had, or are having, the experience.

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**Figure 1.1: Representation of deductive research**

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Wound dressing A is better than wound dressing B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observation</td>
<td>Healing of wounds using dressing A and B</td>
</tr>
<tr>
<td>Confirmation or Rejection</td>
<td>Speed at which the healing takes place</td>
</tr>
</tbody>
</table>
The ‘qualitative’ element of the paradigm refers to the fact that it seeks to understand things that cannot readily be measured or counted. It is more concerned with the quality of an experience and of understanding and belief. Qualitative research starts with a question, something that needs to be explored; it may be used to generate a hypothesis, but it does not start with one. Chapter 2 explores the approaches to enquiry used within this paradigm.

Qualitative research is by its very nature inductive. That is, it generates ideas and theories from what is observed during the research. The data collected lead to the generation of ideas or hypotheses (hypotheses tested in deductive studies, as discussed above, are sometimes derived from inductive research). The researchers start out on an enquiry not knowing what they will find; they allow the data collected to lead them to the creation of a new idea or hypothesis. Inductive research works from specific observations towards creating much broader generalisations. Sometimes described as ‘feature detecting’, it uses observations and interviews to detect the key features of a phenomenon. Figure 1.2 gives a diagrammatic representation of inductive research.

It is worth reflecting on the generic competency introduced at the start of this chapter that requires nurses to practise autonomously, applying ‘relevant theory and research’ to practice. This assumes that the nurse has an understanding of the theoretical basis of research and the variety and types of questions that research can be used to answer. Even at this stage of the book, you

<table>
<thead>
<tr>
<th>Theory</th>
<th>Health care and religious beliefs affect donation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tentative Hypothesis</td>
<td>Cultural differences affect donation choices</td>
</tr>
<tr>
<td>Pattern</td>
<td>Some groups are more likely to be organ donors</td>
</tr>
<tr>
<td>Observation</td>
<td>Some groups are less likely to get a donor organ</td>
</tr>
</tbody>
</table>

Figure 1.2: Representation of inductive research
should already be in a position to identify that there are two main research approaches (or paradigms) that inform the ways in which information for practice is generated. You may, as an individual, have a particular preference for one type of questioning over the other. If you do, how does this preference affect your interactions in the clinical setting?

We have established that there are two key routes to understanding the world of healthcare using the qualitative and quantitative paradigms. Now it is important that we identify how these apparently opposing world views are put into practice to answer research questions that arise in the clinical setting.

Within each paradigm there are a number of approaches to research that are used to answer specific types of questions. These approaches to research are called research methodologies, a term we used above. The following section of this chapter will introduce you to the key elements of the research methodologies that will be explored in more depth in Chapters 2 and 4.

**Research methodologies**

If the research paradigms are the schools of thought upon which research is based, the methodologies represent the more detailed plan of action used to execute the research. The term ‘methodology’ refers to the blueprint for action upon which an enquiry is based. Methodologies supply structure to the research process as they are designed to be undertaken in specific ways in order to answer specific questions.

Examples of the use of a methodology within a paradigm include **randomised controlled trials**, which seek to prove cause and effect and so sit within the quantitative paradigm, and **phenomenology**, which explores people’s experiences of a phenomenon and so sits within the qualitative paradigm. Table 1.1 shows the research paradigms and the major research methodologies that are explored in this book. This is not an exhaustive list, and, as we shall see at various points in the book and especially in Chapter 6, clinical questions often generate the need for research to operate in more than one paradigm.

Research methodologies are, therefore, the overall scheme by which research is undertaken, and the choice of methodology is driven by the nature of this research question being asked.

We now know that the broad research question determines the paradigm within which a research approach lies and that the specific question will then determine the methodology to be applied. Chapters 2 and 4 will examine in more detail how these choices are made and why.

| **Table 1.1: The research paradigms and their major associated methodologies** |
|-------------------------------|-----------------|-----------------|
| **Research paradigm**         | **Qualitative paradigm** | **Quantitative paradigm** |
| Research methodologies        | Phenomenology    | Randomised controlled trial |
|                               | Grounded theory  | Cohort study     |
|                               | Ethnography      | Case-control studies |
|                               | Case study       | Cross-sectional studies |
Once the methodology has been decided upon, the exact methods, or tools, for data collection can be chosen.

**Research methods**

Research methods are the tools by which the information for an enquiry is collected. They are the practical equipment used to gather the data for the study. The choice of paradigm and subsequent research methodology will determine which research methods are used in an enquiry.

Clearly, the methods of data collection have to fit the type of question asked. For example, if the research is about understanding how people feel, how they see the world or how they see their experiences, then the researcher needs to ask them about these things. Such an enquiry requires the researcher to engage in dialogue with the research subjects, using interviews, focus groups or observation in order to gain an insight into their world. These issues cannot be measured or quantified in any meaningful way, so these qualitative methods allow an insight into someone else’s world that cannot be gained using quantitative methodologies.

Conversely, it is not possible to demonstrate that a new wound dressing has some additional clinical benefit for patients by talking to them. Such things need to be measured, and a level of comparison between the new dressing and some existing dressing needs to be undertaken. In order to undertake such an enquiry, the researcher will need to take some biological and clinical measurements that can be enumerated. For example, how long does the wound take to heal? How many days does the patient spend in hospital? These are questions that cannot be addressed meaningfully, or accurately, by qualitative methodologies.

So far, we have established that research generally falls into one of two paradigms, although (as we will see in this book) some research questions may require a blend of the two approaches in order to answer them satisfactorily. We have identified that certain methodologies are associated with each of the two paradigms and that, within the methodologies, certain methods are used to collect the data for the study.

As well as thinking about and selecting the best methodology and methods for a study there are other considerations that a researcher has to take into account when designing and undertaking a study. Some of these will be explored in the following sections of the chapter.

**Activity 1.6**

Before proceeding to read the rest of the chapter, make some notes about what other things a researcher might need to take into account when designing a study.

An outline of what you might find is given at the end of the chapter.
Ethical considerations in research

Ethics permeate all that we do in the delivery of health and social care. It is a requirement of nursing practice that we act in ways that are ethical and that take into account the rights of the people we care for (see the competency cited at the beginning of this chapter for the 'Leadership, management and team working' domain of the Nursing and Midwifery Council’s (NMC) competency framework, as well as the NMC’s Code of Professional Conduct, 2008). Ethical considerations in research are important for many reasons, not least of which is that people enter into research studies of their own free will (unlike entering hospital when unwell, for example) and that the research that we are undertaking is premised on the fact that we do not know what we will find – the uncertainty principle.

It is a sad fact of life that some of the clinical information we use today in healthcare provision has been obtained at the expense of the weak and vulnerable in society. Immediate examples that spring to mind are the atrocities committed by Nazi doctors in the name of medical research in the concentration and extermination camps of the Second World War. But there are also many more recent examples of unethical and immoral practices in healthcare, within societies considered to be world leaders in the promotion and protection of human rights.

Case study

'The Tuskegee Study of Untreated Syphilis in the Negro Male' was a clinical study of the effects of syphilis conducted over the 40 years between 1932 and 1972 in Tuskegee, Alabama, in the United States of America. A total of 399 male African Americans infected with syphilis were enrolled in the study along with a control group of 201 (people without syphilis). All of the participants were poor, most were illiterate and they did not give informed consent. They were not told about their diagnosis; rather, they were told they had 'bad blood' and would get taken to the clinic to receive free medical treatment, as well as free meals and burial insurance, as incentives for participating.

When the study started, existing treatments for syphilis were often toxic and of limited, if any, effectiveness. One of the initial aims of the study was to establish whether patients were better off not being treated with these dubious remedies. Many participants were therefore denied any treatment, and others were lied to and given placebo (fake) treatments so that the fatal progression of the syphilis could be observed.

At the end of the study, only 74 of the participants were still alive; 28 had died of syphilis while 100 died of syphilis-related complications. As well as the effects on the study subjects, 40 wives had become infected, and 19 of their children had been born with congenital syphilis.

The Declaration of Helsinki

Such instances, as well as other notoriously unethically conducted studies, led to the establishment of various conventions and international agreements on the ethical conduct of research involving human subjects. Perhaps the most widely known of these is the Declaration of Helsinki, first
published by the World Medical Association in 1964 and most recently revised in 2008 (World Medical Association, 2008). There are three key tenets of the declaration of Helsinki.

- Studies should be of a generally acceptable scientific standard.
- The study should cause no harm.
- The study subjects should have given their full consent.

What these mean for the various stages of the research process depends upon interpretation and the type of research being undertaken. Before exploring in a little more detail the application of ethics to research, it is worth considering what approaches to ethics might be used to inform that process.

Approaches to ethics

Beauchamp and Childress (2008) present the ethical principles of **beneficence** (doing good), **non-maleficence** (doing no harm), **autonomy** (respecting choice) and **justice** (fairness) as one way of viewing the moral and ethical obligations of human beings. These principles may equally well be applied to research being undertaken in the human setting.

These are duty-based ethical principles that identify the individual human being as the central point of importance in ethical thinking, and dictate the way in which researchers should behave towards their study participants. This duty-based (or non-consequentialist) approach requires researchers to follow certain rules of conduct regardless of their consequences. This way of thinking about ethics has strong associations with both Judaism and Christianity, as it is based on the standards of human behaviour dictated by the Ten Commandments.

In contrast to duty-based ethics, **utilitarian** (or consequentialist) ethics take the view that the ends justify the means – that is, the consequence of the action is more important than the action undertaken. So consequentialist ethics require us to make a judgement about the likely outcome of a course of action, whereas duty-based ethics require us always to act in a way that is in itself good.

We have seen that uncertainty is the starting point for all research, and so it might seem impossible to apply these principles to the research process precisely because we cannot be certain how the research will proceed and what its consequences might be. It is important, however, to take the view that ethics are as much about intentions as they are about what actually happens. Given that the research has the right intentions, and that some of the basic principles of ethics, such as avoiding doing unnecessary harm and aiming for a good outcome, are followed, it is possible to undertake research in an ethical way.

For the researcher setting out to undertake an enquiry, and for the practising nurse who is reading the results of the research and seeking to use them in their day-to-day practice, it is important that the ethics of each stage of the research process are well established. Most, if not all, nursing, medical and health journals now require that all research papers submitted for publication can show that they have received ethics committee approval.
Ethics in the stages of research

The first stage of the research process is deciding what we are going to research and how. Certainly there are ethical issues to be addressed here, including whether the potential benefits of the study are great enough to justify the time, money and effort that will be used in undertaking it. Because we cannot know for certain about the answers to any of these issues, we have to ask questions about the intentions of the study. If the intention of the study is to improve the lives of future patients and clients, then it is reasonable to move to the next question.

The second question that arises is whether or not the study will inflict harm on the research subjects. Again we cannot know for certain whether or not this will happen. Even qualitative enquiries, which involve little more than an interview or a focus group discussion, have the potential to upset people – for example, by encouraging them to confront thoughts and feelings they had suppressed. It is important, therefore, that if the effects of the study cannot be known before the study starts, there should at least be mechanisms in place to minimise any harm that does arise. In a qualitative study this might mean providing counselling or support services for participants. Making such provisions satisfies the requirements of avoiding deliberate harm as well as attaining the best consequences for research participants by minimising unforeseen and unintended consequences of the study.

If the study is likely to inflict some harm, as may be the case in a drug trial or a study of a new surgical procedure, we may wish to ask whether or not the likely outcomes of the study make the potential for harm worthwhile. This is not a decision to be taken lightly. It is necessary for all research to be designed in a way that minimises the likelihood of this occurring – that it is of a generally acceptable scientific standard (World Medical Association, 2008). Any risks, or potential risks, associated with a study need to be disclosed at the point of gaining consent, so that whether the risk is worth taking is a decision that potential participants can make for themselves.

Gaining consent

Gaining consent from potential research participants is not a one-off event. The gaining and maintenance of consent is regarded as an ongoing process by the NHS National Research Ethics Service (NRES, 2008) and the NMC (2008). Gaining true and valid consent for any study may appear impossible given the fact that the outcome of the research is not known at the point that the consent is gained! This should not impede the process of research, nor should it be thought that it makes the process of gaining consent fraudulent. Consent gained in relation to a piece of research is for the participation of the individual in a process that will lead to an as yet uncertain outcome. Consent to participate in research has to be obtained in all cases and for all types of studies.

Consent can be described as a process that takes into account a number of separate elements:

• the competence of the potential participant to give their consent;
• the understanding of the information given;
• freedom from coercion;
• freedom of choice;
• the understanding of the right to withdraw.
Given the nature of health and social care research – the sort of research that nurses may become involved in – the research participants are likely to be in some way vulnerable (e.g. in poor health or elderly). This vulnerability leads to concerns about the competence of the individuals to consent. Such concerns include people who, when well, are without doubt competent.

It is clear that some individuals are not, and will never be, competent to give consent – for example, people with dementia and young children. In the UK the NRES provides clear guidance on what to do in situations where the consent of an individual cannot be gained because of their age or illness. This includes respecting previously given consent, or withheld consent, and seeking the consent of the next of kin or parents where appropriate (NRES, 2008).

Next, we have to ensure that the potential research participants for a study have received information about the study and understood it. This means producing information sheets that are written in a manner that potential participants can understand, checking that potential participants have understood and explaining any ambiguities or misunderstandings. It is at this stage that the help of lay collaborators in research can be invaluable.

Freedom from coercion means ensuring that potential participants do not feel under any obligation to take part in the study. Coercion may result from the fact that the potential participant and the researcher are in a dependent relationship. Such relationships, which might include nurse–patient or student–lecturer relationships, may make the potential participant feel under an obligation to take part in a study. In such cases, great care must be taken to ensure that potential research participants are aware that they are under no obligation to take part, and that not taking part will have no adverse effect on their care or education.

Freedom of choice means ensuring that potential participants understand that they are under no obligation to choose to take part in the study. The choice made should be one they enter into, having read and understood the information given to them and decided they want to participate. They must be free to choose not to participate if that is their wish.

Research participants should also understand they have the right to withdraw from a study at any point. This is what is meant by consent being an ongoing process. Just because an individual agrees to start a study does not mean that they have to see it through to the end against their wishes.

Confidentiality

A further key element of research ethics is the protection of the confidentiality of research participants. Any participant in a study has the right to expect that he or she will not be identifiable when the findings of the research are made public and that participation in research will not lead to any disadvantage for them. The advent of genetic diagnoses has made the issue of participant data confidentiality very topical. Participants are worried that data taken from their DNA for research purposes could lead to increased insurance premiums should it be shown to suggest that they have a high risk of developing a genetically determined disease.

Aside from these ‘high tech’ studies, people involved in studies in which they express controversial opinions or disclose personal information about their battle with disease may wish for the source of this information to be kept private. It is therefore incumbent on the ethical researcher to
adhere to a strict code of confidentiality both while undertaking the research and when writing it up for publication or conference presentation.

Disseminating research

Right at the start of the research process we saw how important it was to look into the existing literature about a topic in order either to inform an immediate change in practice or to design a research study. This means that there is an ethical need for researchers to make the findings of their work public. Withholding the findings of research has consequences for other researchers, who may set out to undertake research into an area that has already been explored, using time and money that could be better spent elsewhere.

There are a number of reasons why not all studies get published. Sometimes the research is undertaken as part of a course of study, and the student, on getting their award, feels that they have completed all they need to do. Sometimes the research comes out with a result that was unexpected – it disproves the hypothesis, perhaps. This may lead some researchers not to publish, especially where the research has been sponsored by an organisation that may be damaged by the negative findings. Another reason that research with negative findings does not get published is that it is rejected by publishers because it does not make good reading.

If we return to our guiding ethical principles, we can say that not publishing or making the findings of research known is potentially unethical for two reasons: it may inflict harm on others and it may lead to negative consequences. The ‘others’ on which harm may be inflicted include: the people who volunteered for the study who expected their sacrifice to benefit other people; researchers who subsequently design studies that are in the same area or contain the same flaws that may have been identified had they seen the previous research; and people who are current patients who may be subjected to care that research has shown does not work.

Other issues to take into account when designing a research project

As well as the research question and the ethical issues, there are a number of things a potential researcher has to take into account before starting on a piece of research. Some of these issues will be discussed in the following paragraphs.

Even the simplest study will have some cost attached to it. Interviewing participants for a study may involve travel, the cost of the recording device and often the cost of professional transcription of the interview tapes. Other costs that may need to be considered, depending on the study, are postage, printing, and paperwork and telephone costs. Many novice researchers underestimate the time that a study will take to do and so may not cost out the time away from work that research grants are often designed to help with.

The amount of time needed to undertake research often comes as a surprise to the first-time researcher. Time needed for a study will include the time taken to read textbooks regarding research design as well as the time taken to undertake a literature review of the topic under
research. The study will then need to be written up for ethical and, potentially, research and development review (that is, a review of the scientific quality of the study as well as what the study may mean in terms of the use of facilities and staff time within the organisation within which it is set). There is a need to write participant literature, undertake the data collection (whatever form that takes), review and analyse the data and then write the study up. Interestingly, the time taken to prepare to undertake the study and the time taken to analyse the findings are both often far in excess of the time taken to actually do the study itself.

Even the most experienced researchers will rely to some extent on the expertise of others at some stage of the research process – most commonly at the study design stage and at the analysis stage. It is often worth getting advice about how the study will be analysed at the design stage in order to ensure that data that are collected are in the right format and of the best type to allow for the best possible analysis. Collecting the correct type of data in the correct format is most important in quantitative studies that will be subjected to statistical analysis, as some forms of data will increase the power of the study.

Because a study can take a long time to do, one of the issues that commonly affects the novice researcher is maintaining their interest, which can wane especially during the design and analysis stages. One of the questions the researcher must ask themselves at the start of any study is, therefore, ‘Will this study hold my attention for its duration?’

This chapter has introduced you to the key elements that need to be considered when setting out to undertake a research project. It has identified that in nursing, there are two broad approaches to answering clinical questions. These approaches – the quantitative and qualitative paradigms – have distinct features and may be used to answer specific types of questions. The choice of research paradigm is determined by the type of question the research seeks to answer, and it is important this is understood from the start of the research process.

We have seen that the choice of paradigm and the nature of the research question then leads the researcher to select an overall methodology – research approach – for their study. The methodology chosen determines the methods, or research tools, that the researcher will apply in undertaking the research.

The need to apply ethical considerations to all stages of the research process has been discussed, and ethical theories used to illustrate why this is important. Ethical considerations have been identified as being more important than scientific considerations when designing a research project.

This chapter has also identified some of the practical considerations potential researchers need to take into account before starting out on a research project. This is important for making sure time and money are spent wisely.
Chapter 1

Activities: Brief outline answers

Activity 1.1: Critical thinking (page 8)
There are several reasons why research is important in informing nursing practice.

- It shows that we can account for our actions.
- It shows that what we do is ethical – it does good or at least avoids doing harm.
- It shows that we are spending public money wisely.
- It demonstrates that what we do is of clinical benefit.
- It responds to the need for governance.
- It establishes the professional credibility of nursing practice.

Activity 1.6: Research and finding out (page 15)
What a researcher might need to take into account when designing a study:

- their own expertise;
- money;
- the availability of time;
- ethical issues;
- access to research subjects;
- availability of support.

Further reading


Chapters 1 and 2 establish the need for and nature of research in the caring professions.


Chapters 1 and 2 provide a good overview of the sources of and need for knowledge in nursing.


A useful discussion of the nature of knowledge and qualitative and quantitative research paradigms.

Useful websites

www.niehs.nih.gov/research/resources/bioethics/whatis.cfm An overview of research ethics including case studies.

www.nres.nhs.uk/ UK NHS research ethics committee’s website.

www.rcn.org.uk/__data/assets/pdf_file/0007/388591/003138.pdf The new RCN guidance on research ethics for nurses, which provides a useful overview of good practice.

www.rlo-cetl.ac.uk:8080/open_virtual_file_path/i2529a6682t/index.html An animated and spoken introduction to qualitative and quantitative research paradigms.

For further activities and other useful material, visit the companion website at www.sagepub.co.uk/ellis_research2e